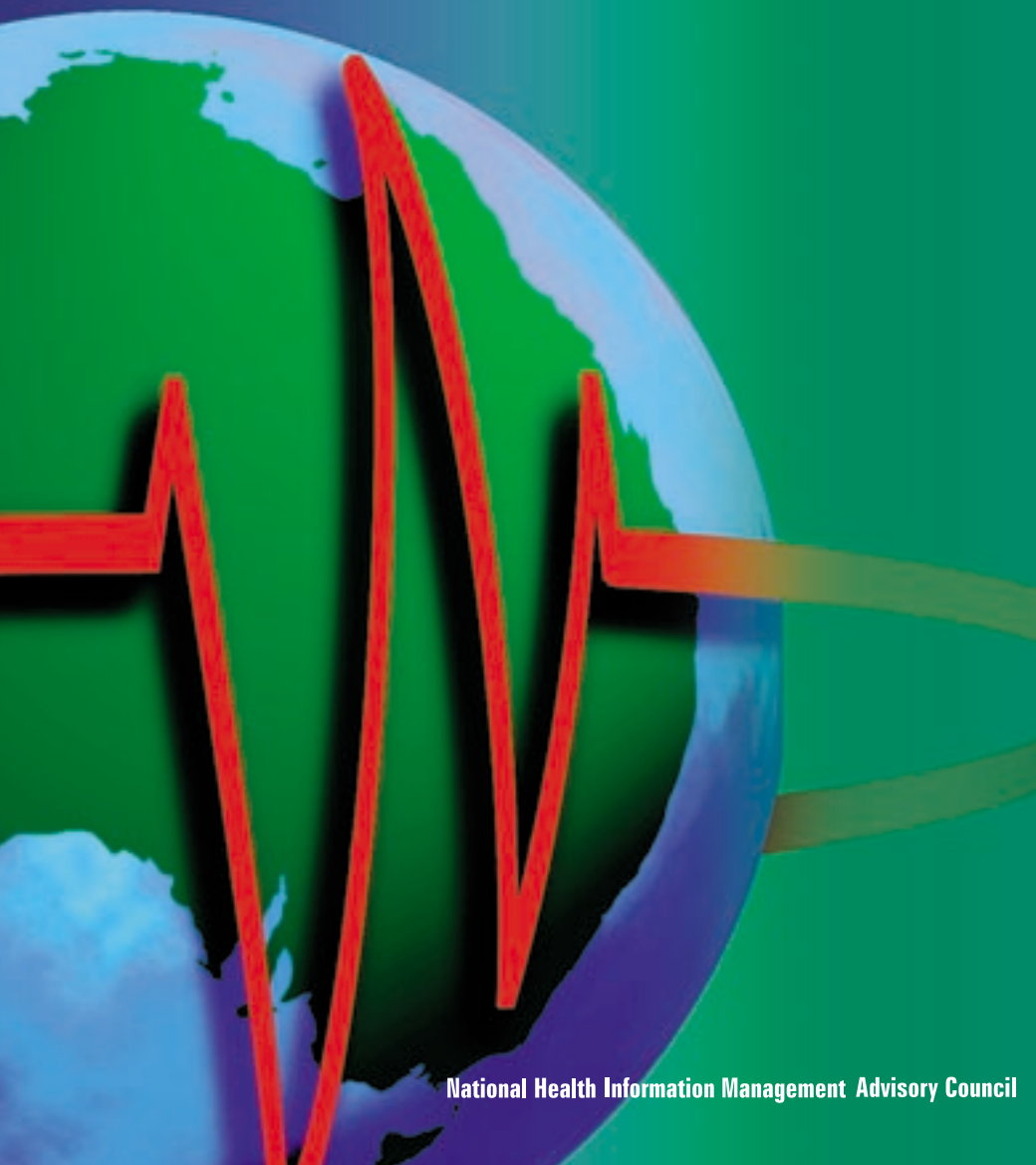


Health Online

A Health Information Action Plan for Australia
Second Edition, September 2001



National Health Information Management Advisory Council



HEALTH ONLINE:

**A HEALTH INFORMATION ACTION
PLAN FOR AUSTRALIA**

SECOND EDITION

**NATIONAL HEALTH INFORMATION
MANAGEMENT ADVISORY COUNCIL
SEPTEMBER 2001**

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FOREWORD

Health Online: A Health Information Action Plan for Australia

Australia is embarking on major changes in the way health care is delivered. New and evolving information and communications technologies provide a powerful tool to improve the delivery of health care and achieve better quality care and health outcomes for individuals and communities. Such technologies also have the potential to deliver information that will empower individuals by helping them better manage their own health.

Across Australia, in both the public and private sectors, there are projects underway (or planned) that are intended to harness online technologies to build a better health care system in Australia. Yet we run the risk that, unless there is a national collaborative approach, we may end up with substantial duplication and wasted effort and expense.

It was with this in mind that Australian Health Ministers established the National Health Information Management Advisory Council (NHIMAC) and endorsed a national action plan for the health sector — *Health Online: A Health Information Action Plan for Australia*. Released in November 1999, the first edition of *Health Online* provided the basis for a national strategic approach to health information, involving new ways of delivering health services.

Since that time, governments, consumer groups, health care providers and other interested parties, working together, have made substantial progress towards better managing and using health information for the benefit of Australians. However, much remains to be done. This second edition of *Health Online* is an important further step. It reports on the significant progress made in many of the key activity areas described in the first edition of *Health Online*, and incorporates new strategies and projects that are planned for the next five years.

While this work proceeds it must continue to take into account a number of core principles that should not be compromised. One is to ensure that a robust framework is created to protect the privacy of people's personal health

information. Such information is extremely sensitive, and consumers must be confident that their information is valued and will be used wisely. These matters are being addressed as a priority within the *Health Online* strategy.

I would like to take this opportunity to highlight some key achievements of the *Health Online* strategy over the past two years.

- Endorsement by Australian Health Ministers in July 2000 of the report of the National Electronic Health Records Taskforce, which recommended the development of a health information network for Australia — *HealthConnect* (section 5.1.1).
- Establishment of the National Health Information Standards Advisory Committee in October 2000. NHISAC is responsible for overseeing the development, coordination and implementation of national health information standards (section 3.2.1).
- Development, publication and release, in February 2001, of *Setting the Standards: A National Health Information Standards Plan for Australia* (section 3.2.1).
- Establishment of the National Health Supply Chain Reform Taskforce in June 2000 and the development of the *National Action Plan for Introducing E-Commerce in the Hospital Supply Chain* (section 6.1.1).
- Development by the Australian New Zealand Telehealth Committee of the *National Telehealth Plan for Australia and New Zealand*, which sets out future directions for telehealth in Australia (section 5.2.1).
- Convening of the National *Health Online* Summit in August 2000, which provided the opportunity for individuals with an interest in health information to meet and discuss information management issues in the health sector (section 2.1). The proceedings of the Summit have been published as *Proceedings from the National Health Online Summit, Adelaide, 3–4 August 2000*.

Health Online has already had a significant impact in promoting a nationally uniform approach to using information and communications technologies in the health sector. It has helped bind Commonwealth, State and Territory thinking and activity by drawing the health information management agenda under a unified framework. It remains an important priority that we engage the community fully as we progress the agenda to ensure that these new ways of managing and using health information actually improve health care, and do so in a way that meets consumers' needs.

On behalf of NHIMAC, it gives me great pleasure to introduce the second edition of *Health Online: A Health Information Action Plan for Australia*.

I invite you to comment on this second edition of *Health Online* by writing to the NHIMAC Secretariat, Department of Health and Aged Care, MDP 12, GPO 9848, CANBERRA ACT 2601 or by emailing nhimac.secretariat@health.gov.au. *Health Online: A Health Information Action Plan for Australia*, second edition is also available on the Internet at www.health.gov.au/healthonline.

Professor Richard Smallwood
Chair
National Health Information Management Advisory Council
September 2001

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PART ONE — VISION AND DIRECTION

When Health Online was released in November ... 1999, I described it as a landmark in information management for Australia. It provides a strategic framework to bring together the key stakeholders in the health care system and to develop a common vision and sense of purpose. It places information management at the heart of the health system and seeks to harness new information and communication technologies to improve information flow, promote continuity of care, support clinical decision making and empower consumers and communities.

Professor Richard Smallwood, Chair, NHIMAC¹

The emergence of a 'global information economy' is transforming the ways in which Australians live and do business. There are enormous social and economic benefits that can be achieved for all Australians by taking advantage of these changes. Reflecting these opportunities, in December 1998, the Commonwealth Government released its strategy document *A Strategic Framework for the Information Economy — Identifying Priorities for Action*, which set a national direction for the information economy in Australia and identified key issues and priorities for action.² The document was endorsed by the Commonwealth and the States through the On-Line Council. As part of this overall strategy, specific action plans have been developed for priority areas, including health.

In November 1999, *Health Online: A Health Information Action Plan for Australia* was released as a national action plan for the health care sector.³ It was developed under the auspices of the National Health Information Management Advisory Council (NHIMAC) by the Commonwealth Department of Health and

¹ Welcoming Speech at the National *Health Online* Summit, 3–4 August, 2000, unpublished.

² Department of Communications, Information Technology and the Arts 1998, *A strategic framework for the information economy: identifying priorities for action*, Commonwealth of Australia, Canberra.

³ Department of Health and Aged Care 1999, *Health Online: A Health Information Action Plan for Australia*, Commonwealth of Australia, Canberra.

Aged Care in consultation with State and Territory health departments and other key stakeholders. This second edition of *Health Online* aims to continue to provide the basis for a national strategic approach to using information in the health system, and to promoting new ways of delivering health services by harnessing the enormous potential of new and emerging online technologies.

These new ways of doing things, including Internet-based communications, have fuelled the growth of the information economy and supported its momentum. The capacity to store, analyse and exchange large quantities of data rapidly and inexpensively in unprecedented ways offers opportunities to transform the way in which vital data are transmitted and managed in the health sector, just as it has in other sectors of the economy. However, *Health Online* is essentially about the better use of information and delivery of services to improve the health of Australians and to further the objectives of our health system. Thus technology needs to be seen as an enabler, that is, as a means to an end rather than an end in itself.

Health Online has been developed in an environment in which the privacy and dignity of individual health consumers is paramount. It is intended to assure consumers that their personal health information is regarded as extremely valuable, that it will be kept private and securely, and used wisely.

While *Health Online* is meant to provide a strategic view of the use of information in the health sector and set the agenda for future national activities, it is also intended to be a practical plan of action. Accordingly, it does not aim to be a comprehensive record of all planned information-related activities for the health sector, but it does set out to describe key activities that need to be undertaken in a collaborative way on a national basis. A five-year timeframe has been used for activities foreshadowed in the plan.

1.1 Health policy context

Health represents a significant sector of the Australian economy, with annual expenditure by the public and private sectors in the order of \$50.3 billion in 1998–1999.⁴ The Commonwealth finances 47 per cent of this expenditure through grants to the States and Territories for public hospital services (via Australian Health Care Agreements) and through rebates for medical services (under the Medicare Benefits Schedule) and pharmaceuticals (Pharmaceuticals Benefits Scheme). State and Territory governments finance approximately 23

⁴ Australian Institute of Health and Welfare 2000, *Health Expenditure Bulletin No. 16: Australia's Health Services Expenditure to 1998–1999*, AIHW Cat. No HWE-15, AIHW, Canberra.

per cent of health spending, while the remaining 30 per cent is financed privately (via private health insurance premiums and out-of-pocket expenses).

On commonly accepted measures (such as longevity), Australians' health is among the best in the world. As well as living longer than people from other countries, on average, Australians are also living healthier lives. Recently, the World Health Organisation calculated what it terms 'healthy life expectancies' based on the concept of Disability Adjusted Life Expectancy (or DALE). DALE summarises the expected number of years to be lived in what might be termed the equivalent of 'full health'. Australia ranked second only to Japan's 74.5 years with a DALE of 73.2 years. And, at a cost of the equivalent of 8.5 per cent of gross domestic product, Australian health care expenditure is only slightly under the OECD average.

However, not all the news is good. There are substantial challenges facing the long-term sustainability of our health care system. Pressures threatening to spur outlays to possibly unsustainable levels include:

- the increasing proportion of older persons in the population;
- the increasing use and changing consumer expectations of health services;
- the rapid increase in the number of new services and products resulting from advances in research and the availability of new technologies; and
- continuing inequalities in health care and outcomes among disadvantaged groups, particularly Aboriginal and Torres Strait Islander peoples.

In this context, Australian governments are committed to a set of objectives established as part of the Australian Health Care Agreements. These objectives are designed to ensure that the Australian health care system is world class. They include:

- maximising the health of individuals and the community;
- achieving a balance in the investment of health resources in individual and community health;
- responding flexibly to community and consumer needs;
- providing services that are integrated and coordinated;
- relying on an evidence basis for health care to achieve best practice in health services; and
- concentrating on proven services and on agreed priority areas.

1.1.1 Recent health reforms

Increasingly, Australian health consumers expect their health system to be characterised by:

- ease of access to high-quality, affordable services;
- equitable treatment for all;
- accountability for the outcomes produced (and for the resources needed to produce them); and
- decision-making on their own part and on the part of their health care providers that is as fully informed as possible.

Governments around the world are attempting to respond to these evolving demands by reforming health systems so that they respond in cost-effective ways to growing expectations. Consistent with overseas trends, improvements in illness prevention, information access, and patient and health service management are progressively taking place in the Australian health care system. These improvements include:

- a move away from programs and providers to focus on consumers and health outcomes;
- an increasingly flexible public/private sector mix that improves choice and efficiency;
- better care through a restructuring of acute and primary care to achieve a greater emphasis on health care provided in the community;
- health sector services provided in a variety of settings focused on consumer satisfaction and desired patient outcomes;
- increasing collaboration within the sector and integration of different parts of the health system to achieve the continuity of care that patients expect (to provide integrated, consumer-focused packages of care); and
- reliable, accessible health information to improve decision-making for consumers and providers alike.

When prices cannot be used to temper demand, as in health care (where it is public policy to subsidise the consumption of health services), it is incumbent on government to target subsidies to those treatments and interventions that are proven to be safe and effective in particular circumstances for particular individuals, as well as being cost-effective. This has resulted in a proliferation of clinical practice guidelines and proposed 'care pathways' to enhance the quality of clinical decision-making. In addition, health care professionals are under ever-growing pressure to acquire and retain vast amounts of knowledge as new treatments emerge and as consumers demand access to more information to

help them make better-informed decisions. Policy makers and administrators, faced with limited resources and the need to maximise both efficiency and the quality of care simultaneously, are seeking greater amounts of comprehensible data to determine where and to whom the public dollar should be directed, and to measure how well services are being delivered.

In this context, there is increasing recognition of the importance of greater and better use of health information, including:

- access to up-to-date health information for both consumers and providers;
- new and improved methods of communicating information among and between consumers and providers;
- sharing of information between service providers;
- sharing of information with health consumers; and
- collecting, collating and analysing information/data across health services, settings and populations.

1.2 Information and services

Health Online is primarily about how the collection, transfer and access to health information can improve the health of all Australians and further the objectives of the health system as a whole. It should be noted, however, that use of the term 'information' in *Health Online* is not meant to limit the scope of the action plan to acquiring and disseminating data (eg personal health information generated during a consultation with a health care provider). *Health Online* is also concerned with data, information and knowledge transfer in interactive services and situations (eg between medical practitioners and other health care professionals, hospitals and pharmacists, as well as between doctor and patient). Thus, for example, the scope of *Health Online* includes activities such as electronic prescribing and online payments systems.

1.2.1 Information needs of key players

The health system in Australia comprises a number of key players, namely: consumers, providers, policy makers and managers. Each group has a specific interest in health information and, given the possibilities created by new information and communications technologies, is pressing for its demands to be met.

HEALTH CONSUMERS

As in other areas of life, consumers of health services are seeking greater access to information, choice and the chance to exercise more control over their own health and wellbeing and that of others on whose behalf they make such decisions (eg their children). At the simplest level, health consumers are seeking access to information held about them in medical records. They want to know about the state of their own health, and are interested in what treatments or interventions work and about any side effects. Having access to such information is also empowering, enabling people to interact as informed consumers and make sensible choices within the health system.

Health consumers are also becoming increasingly familiar with, and accepting of, the convenience of online transactions in other walks of life — such as electronic banking and bill paying. Similarly, access to fast and convenient claims processing will be increasingly expected of Medicare claims and prescribing services in the future. Much is made in the media of remote health service delivery (telehealth) and for many Australians living in rural and regional areas, this will become an increasingly important means of accessing high-quality, real-time interactive health advice (and other services).

While accommodating the needs and interests of those consumers who are increasingly at ease with the 'information age', it also needs to be acknowledged that not all health consumers will find it easy or want to adapt to the new 'online' world. Thus, new information channels will not obviate the need to communicate in other ways to accommodate the needs of many individuals.

HEALTH CARE PROVIDERS

Health care providers are living in a world of ever-increasing advances in therapies (such as new procedures and drugs), greater emphasis on evidence-based health care, increasing consumer expectations, and better-informed and more empowered consumers. Providers use various sources of information in their efforts to act in the best interests of consumers of their advice and services. These sources include:

- information about individual patients held by other health care providers;
- expert knowledge and advice possessed by peers they in turn can consult, or that can be found in publications (increasing numbers of which are available online);
- guidance in the form of authoritative clinical guidelines and care pathways; and
- peer support networks and access to second opinions.

While access to such information is already available, it is often frustratingly delayed, not accessible when needed, or sometimes inaccurate because it relies on recall or patient self-reporting. New ways of providing access to these sources of information (such as electronic links to journals or professional 'chat groups') are part of the information challenge in health. In this context, the current low level of computerisation and associated skills in using information technology needs to be addressed in areas such as specialist practice.

Notwithstanding the challenges to move the health sector towards greater take-up of information technology tools and resources, health care providers are seeking new sources of information, such as built-in alerts and prompts to assist in treating and prescribing, and ongoing monitoring — all of which are part of a growing range of decision-support services.

POLICY MAKERS AND MANAGERS

In the health sector, as in government more generally, there is a growing demand to assess program quality and outcomes regularly and systematically. There is also an increasing emphasis on evidence-based health care, as well as the cost-effectiveness of interventions and treatments. These pressures result in significant demands to collect, collate, analyse and action an ever-increasing volume of health data, information and intelligence.

Governments and service providers are required to balance growing demands for health services and products within budgets constrained by the ability to raise taxes on the one hand, and government's preparedness to devote available monies to health in preference to competing purposes on the other. Factors such as Australia's ageing population and the increasing availability of new services and products driven by research and technological innovation are adding substantially to the need for policy makers and planners to be able to:

- anticipate trends with greater accuracy;
- determine the safety, efficacy and cost-effectiveness of various proposed treatments and interventions for the same (or similar) conditions;
- determine the contribution that preventive, curative and palliative care makes to the health status of the population (compared, for example, with other social and economic determinants of health);
- evaluate where the most value for the dollar lies among the endless possibilities for devoting scarce resources to health;
- monitor and evaluate health outcomes and the quality of care for individuals, communities and the population as a whole;

- identify best practice, where quality and safety improvement are most needed, and monitor improvements over time; and
- evaluate consumer and provider preferences for various approaches to care and prioritise accordingly.

At a broader level of government accountability there is also pressure to demonstrate that large outlays of public funds are producing desired outcomes in as cost-effective a manner as possible. In sum, there is a demand from policy makers and program managers (and government more generally) for better and more information about the effectiveness and efficiency of health spending.

While policy makers are mainly concerned with issues of individual, community and population health, the health sector can also be viewed as an important part of the Australian economy. Australia's reputation for excellence in health training and service delivery, and its growing interest in the use of health information (including its pioneering work in telehealth services) means there is potential to export health information services. Thus, there may be considerable opportunities for Australian health care providers and health information industries in the global market place, especially in our immediate region.

1.3 A way forward

Health information initiatives that take advantage of new and emerging information and communications technologies should be designed to meet the needs and expectations of key players in Australia's health system for more, better and more timely information. In considering how to advance this agenda, it is also important to have a statement of the key stakeholders' commitments. In this regard, the mission for *Health Online* remains:

To improve the delivery of health care and achieve better quality of care and health outcomes through effective and innovative use of health information.

1.3.1 Securing a national approach — the need for collaboration

The way ahead must acknowledge the need for national (and international) collaboration. All over the world, information and communications technologies are being harnessed to deliver better-targeted, more cost-effective health and allied services. Countries such as the United Kingdom⁵ and

⁵ National Health Service Executive 1998, *Information for health: an information strategy for the modern NHS 1998–2005*, Department of Health Publications, West Yorkshire.

Canada⁶ have ready recognised the need for a national, strategic approach to health information management and information technology if they are to secure anticipated gains for their citizens' health and their country's health systems. Adopting a collaborative, national approach in Australia will also minimise the potential risks of *ad hoc* (and therefore probably incompatible) activities and initiatives that could give rise to the equivalent of a repetition of Australia's infamous rail-gauge problem.

Until recently in Australia, clinically-oriented information technology applications have tended to be either stand-alone or fairly specialised. Examples are hospital-specific applications (eg pharmacy, radiology, pathology systems) in general practice and pharmacy settings to assist in prescribing and dispensing pharmaceuticals; and telehealth applications (eg to deliver diagnostic and psychiatric services to rural and remote areas). While Australia can claim to be a world leader in telehealth, it is yet to fully develop its use of information and communication technologies to support clinical services and to educate and inform consumers. Nevertheless, States and Territories are now realising their potential for wider application in the health sector, and are investing accordingly. The Commonwealth sees its role as helping to create the enabling environment whereby the nation emerges with a health information infrastructure that is sufficiently robust and flexible to accommodate the needs of key players, and to play a leadership and coordinating role where a national approach is necessary or desirable. Examples of the needs of key players include privacy and confidentiality of personal health information, quick access to information where and when it is needed, and information on the accessibility, safety, quality, and cost-effectiveness of the system.

The benefits of collaborating in order to adopt a national approach are both considerable and obvious. Information technology systems can be extremely expensive and, as a relatively small country, Australia needs to be able to maximise such investments by ensuring that open architectures with high connectivity and interoperability are the hallmark in both the public and private sectors.

Also, the Australian population is highly mobile and health consumers should be able to grant health care providers access to their personal health information wherever they are in Australia (or, indeed, when they are overseas).

To enable systems to interact seamlessly, common standards must apply both to the information being transmitted and the infrastructure used to transmit it. In

⁶ Advisory Council on Health Infostructure 1999, *Canada Health Infoway: paths to better health: final report*, Health Canada Publications, Ottawa.

other words, the health sector needs the interoperability increasingly enjoyed in other sectors of the economy (such as banking). Currently, the health information technology market in Australia is small and fragmented. By ensuring that systems are developed according to agreed national standards, industry will be in a better position to develop applications on a commercial scale. At the same time, to maintain Australian competitiveness, standards adopted here should conform to internationally agreed standards that are developed with Australian input.

Moreover, the Australian health care system itself is fragmented. Services straddle the private and public sectors and there are different delivery mechanisms between various parts of the country. Much of the work undertaken in health-related online technologies has been done in isolation from similar efforts elsewhere. A nationally coordinated approach is needed to create an integrated network for the whole health sector.

The exchange of what Australians properly regard as highly sensitive personal health information with other parties also requires an acceptable legal and privacy framework that ensures such information can be transferred securely to authorised users for approved purposes. Similarly, with increasing recourse to telehealth, providers also need such frameworks in place. This will ensure that when they use online technologies to provide advice or treatment, they are operating in a well-defined medico-legal environment in terms of the advice or treatment that they provide with the assistance of online technologies in which people's privacy is respected and protected. While standards of privacy protection are inconsistent across public and private sectors, significant progress has been made. There is now wide agreement that a national approach is needed to avoid piecemeal activity across Australia and lack of compatibility with other countries.

The Commonwealth has recently passed the *Privacy Amendment (Private Sector) Act 2000* to safeguard personal information in the private sector. This will mean that, for the first time, national baseline legislation will cover the collection, transfer and use of personal information — including health information — in the private sector. A Commonwealth, States and Territories working group is also developing a National Health Privacy Code.

In addition, as emerging technologies are used increasingly to communicate highly sensitive information across health and community settings to support integration and coordination of care and to make better policy and planning decisions, there may be a need to consider whether specialised legislation is necessary to compliment the existing protections incorporated in the *Privacy Act 1988*.

Australian governments have committed themselves to a collaborative, national approach through the creation of the National Health Information Management Advisory Council (NHIMAC) — a high-level body that advises Health Ministers. Key interest groups (consumers, providers and industry) as well as the Commonwealth, States and Territories are represented on NHIMAC. There are also existing structures that bring the Commonwealth, States and Territories together in partnership on health information matters at the working level. Examples are the National Health Information Management Group (NHIMG) and the Australia New Zealand Chief Information Officers' (ANZ CIO) Forum.

1.3.2 Guiding principles

Planning for the future will need to take some guiding principles into account. These principles address the need for a consumer focus, the need to build on firm foundations, and the importance of achieving a balance between the public and private sectors. The principles are as follows.

- Consumers, providers and managers are encouraged to use information and communication technologies appropriately and innovatively.
- Information that is collected about individual health consumers is transferred and used with their knowledge and authority.
- Information needed for research, policy or planning purposes should be generated as a by-product of operational systems that are designed primarily for other purposes — such as achieving better health outcomes for individuals, groups and communities, or organising payments.
- Health consumers and providers are engaged at all stages of planning and developing new information services.
- Public and individual interests will be protected, particularly in relation to privacy and the confidentiality and security of personal health information.
- Governments should concern themselves with providing leadership, setting directions, and encouraging the private sector, health care providers and consumers to participate fully in the new 'information economy' as it applies to health.
- Planning and coordination should be undertaken at the national level to ensure a high degree of coherence and consistency, so as to eliminate duplication and waste.
- The costs and benefits of proposals to improve information management are assessed to ensure an approach to investment based on value for money.

1.4 Plans for action

Against this background, the focus of *Health Online* is on action plans. These plans include current projects designed to meet the overall mission and thereby deliver better information and services to consumers, providers and managers in the health sector. The plans are for nationally significant activities that are complemented by many more projects that are underway in the States and Territories. Plans will be changed and updated as new priorities emerge and projects are completed. This edition of *Health Online* has also attempted to capture a sense of future work that needs to be done by referring to some projects in name only as a way of telegraphing intended initiatives and activities.

The plans have been developed within a strategic framework designed to achieve the overall objectives of *Health Online*. In essence, this framework is to:

- build the necessary national coordination mechanisms and partnerships as a first priority;
- get the building blocks (privacy protection, standards, infrastructure etc) in place; and
- design and deliver important national initiatives (information and health services) that address the needs of key interest groups.

The framework is represented by the key work areas described below. The headings form the basis of the subsequent sections where the full details of the action plans are spelt out.

ACHIEVING NATIONAL COLLABORATION

This section contains projects that concern the establishment of national collaboration and partnership arrangements designed to bring a nationally coordinated approach to the development of health information services in Australia. Coordination issues also include the need for a communication strategy and for information on activities in the sector to be available to all interested parties.

LAYING SOUND FOUNDATIONS

The foundations of the *Health Online* framework comprise those issues that require national agreement and cooperation if health information activities are to proceed on a coherent basis. With the necessary agreement, individual projects will be able to proceed confident that they will be interoperable on a national basis. Without agreement, repetition of the 'rail gauge' problem is almost inevitable. Key issues are privacy protection and other legal/security issues,

standards, compatible infrastructure, consistent management and training, and necessary research and development activities.

EMPOWERING CONSUMERS AND COMMUNITIES FOR BETTER HEALTH

As noted already, health consumers are seeking more information, more choice and a greater say in their own health and wellbeing. Accordingly, projects in this section of the action plan aim to tailor information and services to meet consumer expectations.

SUPPORTING CLINICAL CARE

This section of the plan describes projects designed to support clinical care. They cover the sharing of information for coordinated care, decision-support services and better access to information on what constitutes 'best-practice'.

USING INFORMATION TO BUILD A MORE EFFICIENT AND EFFECTIVE HEALTH CARE SYSTEM

This section covers two critical areas: efficiencies that can be achieved through the use of electronic data transfer (in areas such as hospital supply chain activity, Medicare claims and electronic prescribing); and projects that are designed to deliver better clinical and administrative data for research, policy and planning purposes. Ultimately, such projects are designed to inform health planners about health needs and the effectiveness of various health interventions so that health resources can be applied to maximum effect.

EXPORT OF AUSTRALIAN ONLINE HEALTH SERVICES

Health services in Australia are well regarded overseas, particularly within our immediate region. Australia already exports various kinds of health services, and there is considerable scope to develop an export market for a range of health information and other direct services delivered remotely. This part of the plan describes actions designed to provide impetus for growth in this important area.

1.5 The Australian health care system as an integral part of our 'information society'

Health services and health sector management will be transformed in the years ahead by better use of information, re-engineered health services, and the cost-effective use of information and communication technologies throughout the

sector. If strong foundations are laid and key issues, such as privacy, are addressed in an acceptable way, and if the projects mapped out in this plan are implemented, then Australia's future health care system could be characterised by the following features.

- Consumers and providers, whether in cities or in regional Australia, have online access to medical records, clinical advice, specialist referrals, diagnostic test results, and other telehealth services.
- Consumers have the opportunity to provide general practitioners, specialists, hospitals (public and private) and other health care providers with access to information about their clinical histories held in comprehensive lifetime electronic health records. These records, which comprise particularly sensitive personal health information, have controls that ensure their security, maintain privacy, and ensure their appropriate use and disclosure. Consumers themselves have access to their own records.
- There is a seamless delivery of care for the consumer, with the right information being available when and where it is needed (eg at the point of care), and with greater integration and exchange between health and community sectors than is currently the case.
- Relevant information from medical records is integrated into clinical decision-support systems, which also draw together other relevant information.
- Consumers and providers have ready, electronic access to information to support informed choices between potential treatments. This will provide better quality health service at the time and point of delivery.
- Consumers, providers and managers have access to high-quality data for developing performance information for benchmarking and quality-improvement purposes.
- All providers are linked with the key funders of the system (such as private health insurance funds and the Health Insurance Commission) to enable online, real-time transactions.
- Data are gathered as a by-product of operational systems to support research into improved promotion, prevention and treatment, and to provide a foundation for public health initiatives generally, while at the same time maintaining privacy and confidentiality.
- Consumers, providers, health care organisations and governments have access to data that enable measurement of quality of care and health outcomes to inform treatment choices and policy development.

PART TWO — ACHIEVING NATIONAL COLLABORATION

Collaboration is essential to success.

Mr Michael Reid, Director General, NSW Health⁷

National collaboration is predicated on the desirability of pursuing a coherent and consistent approach to the development of information activities, customer services and the use of information technologies in the health sector. Collaboration also involves entering into effective partnerships with stakeholders. In particular, the level of participation and 'ownership' will be threatened without the specific involvement of:

- health consumers and consumer organisations;
- health care providers and professional health organisations;
- organisations (both government and non-government) with an interest in privacy matters;
- the different tiers of government (the Commonwealth, States and Territories, and local government); and
- the private sector.

2.1 National Health Information Management Advisory Council

Australian governments are committed to mechanisms that will facilitate collaboration between the Commonwealth, States and Territories and other key stakeholders in the development, uptake and implementation of new information and communications technologies in the health sector. Principal among these

⁷ Department of Health and Aged Care 2001, *Proceedings from the National Health Online Summit*, Commonwealth of Australia, Canberra.

mechanisms is the National Health Information Management Advisory Council (NHIMAC).

CONTEXT

A collaborative, national approach is needed if Australia is to maximise the potential of emerging information and communications technologies to transform information management in the health sector for the benefit of individuals and communities.

OBJECTIVES

1. To provide a nationally coordinated approach to improving health information management through greater and more consistent uptake of information and communications technologies.
2. To increase necessary synergies among jurisdictions and reduce unnecessary duplication of effort.
3. To establish and maintain strong linkages between existing and newly created health information management and information technology bodies and forums.

PROGRESS TO DATE

In July 1998, Australian Health Ministers agreed to establish NHIMAC as the national peak body for progressing key issues relating to the use of information technology in the health sector.

NHIMAC, which brings together consumers, government and representatives from the private health sector and industry, is expected to:

- advise Australian Health Ministers on options for promoting a nationally uniform approach to more effective information management within the health sector;
- promote the efficient and effective use of information technology in health;
- develop a partnership with the private health and information technology sectors;
- encourage the development of a market for Australian health information technology and services; and
- protect the public interest — particularly in relation to privacy.

A number of other national representative bodies exist to deal with health information issues, including the National Health Information Management

Group (NHIMG) and its working groups. NHIMAC does not duplicate such ongoing work. Rather, it is principally concerned with providing advice to Health Ministers on policy crucial to the development of online activities in the health sector. It is also expected to take the initiative to remove 'road blocks' to development in key areas.

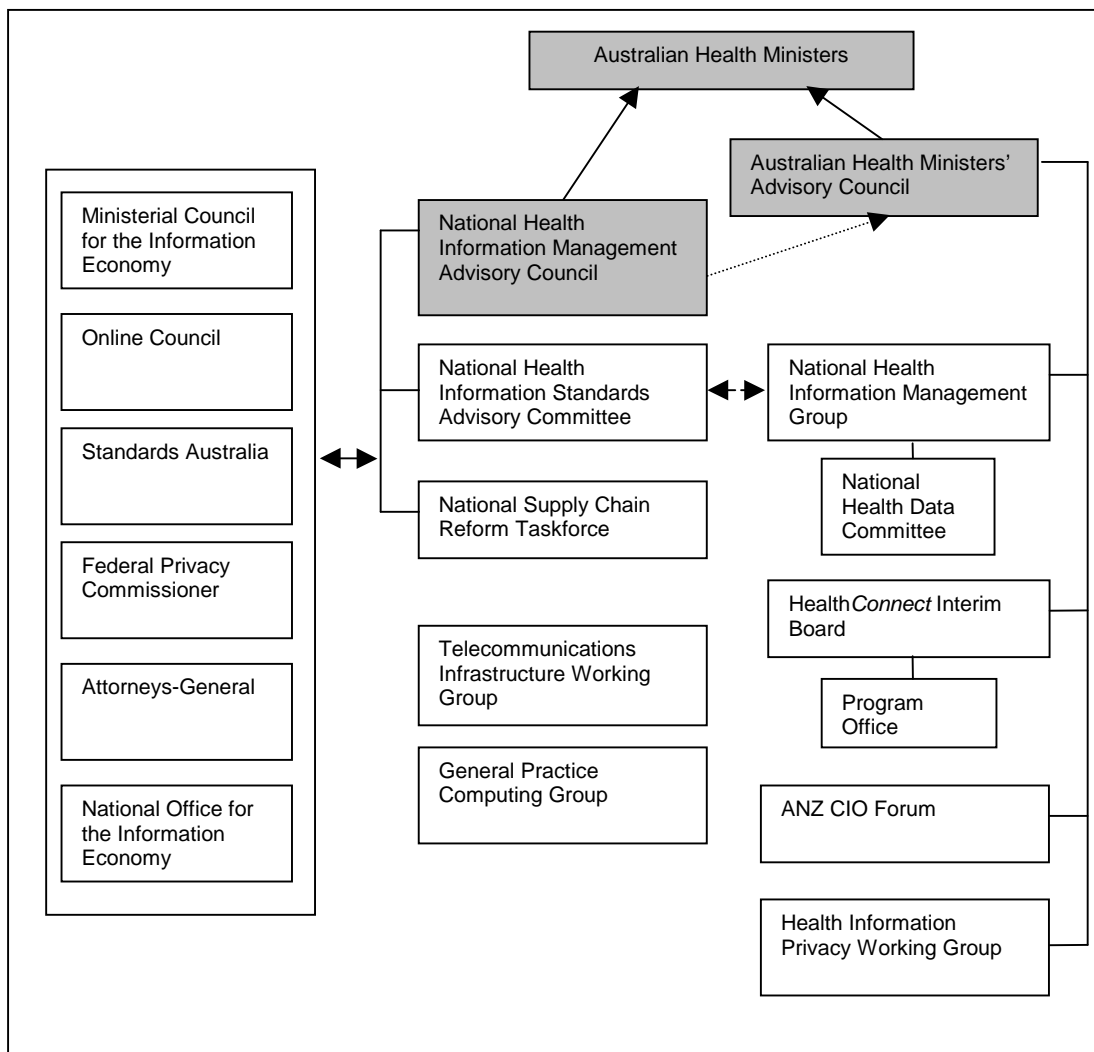
NHIMAC also has a wider role of ensuring that strong linkages are maintained between the key players, in particular with other non-government peak organisations dealing with information management and information technology issues across the health sector. These include the General Practice Computing Group (GPCG), the Australian Information Industry Association (AIIA) and the Medical Software Industry of Australia (MSIA).

NHIMAC progresses key issues under the *Health Online* framework through its sub-committees. The sub-committees make recommendations about new policy directions for key work areas. The recommendations are then reported through NHIMAC for consideration and endorsement by Health Ministers. In most cases, implementation of an agreed new policy becomes the responsibility of a body that reports to the Australian Health Ministers' Advisory Council (AHMAC). To date, NHIMAC has operated four sub-committees as follows.

- The National Electronic Health Records Taskforce, which was established in November 1999 to advise Health Ministers on the development of a national framework for electronic health record systems. Health Ministers endorsed the Taskforce report, *A Health Information Network for Australia*, in July 2000.
- The Health Supply Chain Reform Taskforce, which was established in June 2000 to advance a national position on supply chain reform issues. The Taskforce has developed the *National Action Plan for Introducing E-Commerce in the Hospital Supply Chain*.
- The Australian New Zealand Telehealth Committee, which was reconstituted under NHIMAC in June 2000 to establish a framework for the development and implementation of national telehealth policies and standards that are aligned with clinical practice and business objectives. The Committee produced the *National Telehealth Plan for Australia and New Zealand*.
- The National Health Information Standards Advisory Committee (NHISAC), which was formed in June 2000, has an ongoing policy role that straddles both the public and private sectors. Through NHIMAC, it provides advice to Health Ministers on health informatics standards that should be adopted. The committee released *Setting the Standards: A National Health Information Standards Plan for Australia* in February 2001.

NHIMAC's strategy has also been to engage the Commonwealth and the States and Territories in shared responsibility for supporting these sub-committees. Thus, the Commonwealth has provided administrative support for the National Electronic Health Records Taskforce and NHISAC, South Australia for telehealth, and Victoria for supply chain reform. Areas of likely future focus for NHIMAC include telecommunications infrastructure and decision support.

Figure 2.1: National Health Information Management Advisory Council — inter-relationships with other national structures with a major role in progressing health information management and technology issues



Communications

NHIMAC sees part of its role as informing interested parties about the *Health Online* agenda. As such, NHIMAC initiated a communications strategy for 1999–2000 that was intended to promote an understanding of, and commitment to, the agenda. The launch of *Health Online: A Health Information Action Plan for Australia* on 4 November 1999 by the Federal Minister for Health and Aged Care was the first phase of the communications strategy. The *Health Online* agenda has since been actively promoted through activities such as participating in relevant conferences and seminars, publishing articles and releasing press statements. NHIMAC also convened the first National *Health Online* Summit in August 2001. The Summit program was designed to leave participants better informed and to elicit views on current activities and future priorities for the health information agenda. Proceedings from the Summit were published as *Proceedings from the National Health Online Summit, Adelaide, 3–4 August 2000*. To help keep interested parties informed about activities and to facilitate two-way communication, NHIMAC created a *Health Online* website at www.health.gov.au/healthonline and established an email address for correspondence at nhimac.secretariat@health.gov.au. NHIMAC is expected to develop a more structured approach to consultations as part of a communications strategy for 2001–2003.

PROPOSED ACTIONS

1. In consultation with key stakeholders, NHIMAC is to oversee the development and implementation of key *Health Online* policy projects, including projects in areas such as health information standards work, telecommunications infrastructure, telehealth and supply chain reform, as well as maintain links with the implementation of *HealthConnect* (see section 5.1.1).
2. Conduct the planned review of NHIMAC that was agreed by Health Ministers when NHIMAC was established. The review would consider NHIMAC's achievements and future directions, the appropriateness of the current structure (including membership of NHIMAC and the number and membership of NHIMAC sub-committees), and links to other structures — by February 2002.
3. Develop and implement a communications strategy for the period 2001–2003 by September 2001. The strategy will build on the communications activities that have been undertaken to date.
4. Develop and implement a stakeholder consultation strategy by February 2002. The strategy will provide guidelines on consultation processes that are to be adopted in discussion of health information issues as they arise. The strategy will include ways in which consumer groups can be better informed

and consulted about the initiatives being progressed under the *Health Online* agenda.

5. Publish *Health Online: A Health Information Action Plan for Australia*, second edition, by September 2001.

TIMETABLE

2001–2002

RESPONSIBILITY

Commonwealth to initiate. Commonwealth, States and Territories and other related stakeholders to participate.

2.2 Future work

The vision that informs the NHIMAC initiative is of an innovative Australian health system that makes efficient and appropriate use of new information management tools through a distributed network of actions, guided by clear objectives, priorities and national strategies.

NHIMAC will continue to elaborate on priorities and activities within a living plan. In particular, it will direct attention to:

- the policy and regulatory framework that allows better information management in health;
- clarifying responsibilities and coordinating activities;
- identifying incentives necessary to support change;
- developing and communicating information and training in support of change; and
- encouraging others in the system to connect their own action plans to the national plan.

PART THREE — LAYING SOUND FOUNDATIONS

... the community has as much right to privacy in the e-world as elsewhere ...

Mr Malcolm Crompton, Federal Privacy Commissioner⁸

Getting privacy right for e-health means carefully listening to the consumer and ensuring representation in the development and implementation of proposals.

Mr Malcolm Crompton, Federal Privacy Commissioner⁹

The way forward begins with acknowledging that, without agreed national standards, health information will break down into smaller networks — isolating some jurisdictions, individual organisations such as hospitals, or even individual health providers including general practitioners. Widely accepted and implemented standards are critical to underpin information activities in the health sector, including electronic business transactions (e-commerce), the development of a national approach to electronic health records and exchange of information between different parts of the health sector.

Mr Philip Hagan, Chair, NHISAC¹⁰

3.1 **Develop the legal, data protection and security frameworks necessary to facilitate electronic transfers of health information**

The degree to which the individual consumer's privacy is protected, and is perceived to be protected, is crucial to the success of initiatives aimed at greater

⁸ Proceedings from the National *Health Online* Summit

⁹ op. cit.

¹⁰ op. cit.

sharing of personal health information by electronic means. New systems of handling personal health information need to recognise that trust in the privacy and confidentiality of the sensitive information that consumers share with their health care providers is fundamental to receiving appropriate care.

Consumers expect that their personal health information is collected, stored, communicated and analysed only on a need-to-know basis, that they have the opportunity to refuse permission for such information to be transferred to a third party, and that their information will be held securely at all times. The issue of access to their own health care information is also of critical concern to consumers, and needs to be addressed in the context of measures to protect personal health information. With increasing recognition of the individual and public benefits that can be gained through greater access to de-identified and aggregated clinical data for policy, planning and research purposes, has come acceptance that strict protocols and protective measures need to be in place to ensure that such activities can be agreed and undertaken in an environment of public trust. This points to the importance of a statutory framework to replace the current common law basis of patient/clinician relations. The legitimate privacy requirements of providers also need to be considered in this context, as will issues of ownership and copyright of health data.

Electronic data transfer across the health sector also raises questions about authorised access and the certainty that such data are sent only to the person or people it is intended should have access to that information. In this context it will be crucial to certify and register potential information users for the purposes of electronic identification and authentication.

The Commonwealth Government's *Electronic Transactions Act 1999* and corresponding State and Territory legislation is a vital element in the development of an online environment. The Act places electronic transactions on an equivalent footing to paper transactions and paves the way for health care to operate increasingly in the paperless environment. The Act also provides the context for supporting work on security and authentication as well as electronic requesting and service delivery.

3.1.1 Privacy/data protection

CONTEXT

Currently, the community has a high level of trust in the way hospitals and doctors maintain the confidentiality of their health information. However, the opportunities emerging technologies now offer to collect, use and exchange information both internally and externally have heightened concerns about whether, and to what extent, the confidentiality of personal information will be

respected and preserved in the future. This is an issue in the health sector in particular, where people are often at their most vulnerable and powerless, where information is often particularly sensitive and personal, and where inappropriate disclosure and use of personal information can have a devastating effect on people's lives and circumstances.

Thus, if health consumers are to be convinced of the benefits that the greater capture and use of personal information can bring to individuals and the general population, they will need to be assured that the privacy of their own health information will be adequately protected. There is a risk that if consumers do not have confidence in the way their personal health information is handled, they may well oppose the implementation of new online initiatives, or even withhold vital information from health care providers.

Expectations of sufficiently guaranteeing people's privacy notwithstanding, health consumers also need to be confident that they are obtaining quality health care and that health resources are distributed efficiently and equitably. In the health system, a fundamental and recurring ethical dilemma arises when there is tension between an individual's right to privacy and the public or general benefit. Stated succinctly, 'the ethical problem is to maintain the paramount welfare of the individual while continually exploring new ideas that may improve that welfare'.¹¹

To ensure an ethical approach to information use and management, consideration must be given to the constraints imposed by the legal duty of privacy and confidentiality (and the provisions of privacy legislation) and the public interest in the privacy of personal information on the one hand, and the legitimate public health use of information on the other.

At the National level, Section 95 of the Commonwealth *Privacy Act 1988* permits the National Health and Medical Research Council (NHMRC) to issue guidelines, which allow research to proceed where the public interest for the proposed research substantially outweighs the public interest in adhering to the Information Privacy Principles, which bind Commonwealth agencies under the *Privacy Act 1988*. Similarly, the NHMRC is currently developing guidelines under Section 95A of the *Privacy Amendment (Private Sector) Act 2000* to provide guidelines to private sector organisations seeking to collect personal health information for research, statistical work and management and funding activities where obtaining individual consent is not practicable.

¹¹ Baikie MJ 1984, *Ethics and Confidentiality*, Transactions of the Menzies Foundation, Vol 7, pp159–162.

Decisions about ethical issues will often need to be made on a case-by-case basis. Basic principles that provide the foundation for ethical decision-making in health include:

- beneficence — the intent to ‘do good’ for the individuals involved, either directly, or indirectly by expanding knowledge;
- non-maleficence — the prevention of harm;
- justice — striking an appropriate balance between the public interest (or general welfare) and the interest of the individual; and
- autonomy — the capacity of individuals to make decisions about their own lives and their right to exercise this capacity.

There has been a growing realisation that Australia needs a stronger approach to health information privacy and the ethical use of information to respond to current demands for data sharing and to plan for the increasingly complex issues that are emerging as advances in technology open up new possibilities for using information.

Governments, industry and many health care providers are increasingly keen to see national arrangements established to provide a nationally consistent approach across jurisdictions, and to begin to address future needs.

The Commonwealth [Privacy Act 1988](#) lays down strict privacy safeguards which Commonwealth and ACT government agencies must observe when collecting, storing, using and disclosing personal information. The Act also gives individuals access and correction rights in relation to their own personal information.

In December 2000, Federal Parliament passed the *Privacy Amendment (Private Sector) Act 2000*. Due to come into effect on 21 December 2001, the Act sets out the rules for appropriate handling of personal information, including personal health information, in the private sector. The legislation allows for the development of codes by organisations or particular industry sectors, subject to the approval of the Federal Privacy Commissioner. In the absence of an industry-specific code, the legislated National Privacy Principles apply.

During the development of this legislation, the Federal Privacy Commissioner consulted widely to ensure that the National Privacy Principles contained in the Act are appropriate for personal health information, taking into account the particular sensitivities relating to health information and the need to balance legitimate public interest in obtaining health information under controlled circumstances.

As the health sector straddles both public and private providers, in an electronic environment it becomes increasingly important for nationally consistent privacy

protection arrangements to be in place across both sectors. Consumers and providers will seek assurance that health information exchanged electronically between public hospitals and general practitioners, for example, is handled in the same way, regardless of where in Australia that needs to occur.

Any attempt to develop a nationally consistent approach to privacy also needs to manage the key information issues confronting the health sector today. They concern electronic linking of data to provide better coordinated care (see section 5.1.1), and electronic linking of data for better policy and planning (see section 6.2.1). These initiatives can only proceed successfully in an environment in which consumers are confident that their privacy will be protected and where they can understand and maintain a reasonable level of control over the way in which their personal health information is used.

OBJECTIVES

1. Develop nationally consistent data protection legislation that covers personal health information.
2. Introduce additional measures (as necessary) to allow initiatives in communicating information for better-coordinated care and in linking data for better policy and planning to proceed within a robust privacy framework.

PROGRESS TO DATE

The Federal Parliament passed the *Privacy Amendment (Private Sector) Act 2000* in December 2000.

The Act will extend coverage to all private sector health service providers and organisations collecting, using and disclosing personal health information, except for personal health information contained in employee records. In particular, organisations providing a health service will be bound by the Act from 21 December 2001.

In addition, legislative schemes adopting privacy principles have already been introduced or are pending in NSW, Northern Territory, Victoria and the ACT.

PROPOSED ACTIONS

In addition to more general guidelines for industry in relation to personal information, the Federal Privacy Commissioner issued draft Health Privacy Guidelines for public consultation purposes on 14 May 2001. These guidelines, once endorsed, will assist health sector organisations in meeting their obligations under the new legislative standards.

In acknowledgment of stakeholders' views that e-health initiatives, such as HealthConnect, require a robust, health-specific privacy framework, Health Ministers have established a Health Information Privacy Working Group under the Australian Health Ministers' Advisory Council (AHMAC) to develop a nationally integrated privacy framework for health information. The Privacy Working Group — comprising Commonwealth, State and Territory representatives — is developing the draft National Health Privacy Code with the aim of delivering consistent privacy arrangements across the public and private sectors. The Code is intended to form one layer of privacy within which key initiatives such as HealthConnect can operate.

The overall privacy framework may consist of three layers. They are:

1. The *Privacy Amendment (Private Sector) Act 2000* and guidelines developed by the Federal Privacy Commissioner.
2. The National Health Privacy Code, which is expected to take the principles contained in the *Privacy Amendment (Private Sector) Act 2000* to a greater level of detail. The code will apply specifically to health information and both public and private sector organisations will be able to use it.
3. Additional legislation for specific e-health initiatives, such as the operation of HealthConnect (including matters such as consumer consent, responsibilities and obligations of providers, specified uses of data and governance of the proposed network) and legislation required for the Better Medication Management System.

The draft National Health Privacy Code is expected to be distributed for public consultation in January 2002. The mechanism by which the code will be implemented on a national basis has not yet been determined. One option is for it to be approved under the *Privacy Amendment (Private Sector) Act 2000* for use by private sector organisations, with States and Territories enacting the code for their public sectors.

TIMETABLE

1. Draft Health Privacy Guidelines released for public comment — May 2001. Publication of the Federal Privacy Commissioner's Health Privacy Guidelines to assist in the implementation of the *Privacy Amendment Private Sector Act 2000* — 26 October 2001.

Draft National Privacy Principle Guidelines released for public comment — May 2001. Publication of the Federal Privacy Commissioner's National Privacy Principle Guidelines to assist in the implementation of the *Privacy Amendment Private Sector Act 2000* — 26 October 2001.

2. Commencement of the *Privacy Amendment (Private Sector) Act 2000* — 21 December 2001.
3. Draft National Health Privacy Code circulated for consultation — January 2002.
4. Referral to the Privacy Commissioner of the National Health Privacy Code under the *Privacy Amendment (Private Sector) Act 2000* — June 2002.

RESPONSIBILITY

Commonwealth Department of Health and Aged Care, State and Territory health authorities, Commonwealth Attorney-General's Department, Federal Privacy Commissioner, the Health Insurance Commission and the Australian Institute of Health and Welfare.

3.1.2 Security and authentication

CONTEXT

Health sector communications generally involve the transfer of highly personal and sensitive information. Moving to an electronic environment to support these communications demands a high degree of confidence that information will be transferred securely and that the identity of the parties sending and receiving information is not in dispute. These attributes are not readily associated with the Internet at present.

It is vital to protect the integrity of electronic health information in order to support both existing and future electronic health initiatives, such as the proposed national health information network *HealthConnect*, in ensuring personal privacy and thereby instilling public trust. To ensure that robust security arrangements are in place, the National Health Information Standards Advisory Committee (NHISAC) and Standards Australia's security sub-committee are working together to develop a national health sector security framework that will specify administrative and technical measures to safeguard electronic health information against loss, modification and inappropriate dissemination.

Importantly, technical security solutions are available now, and can be designed with the scale of the health sector in mind. These solutions are based partly on public and private key technology, and will operate within the overarching security framework.¹²

¹² National Electronic Health Records Taskforce 2000, *A health information network for Australia*, Commonwealth of Australia, Canberra.

OBJECTIVES

1. Develop a sound security framework comprising agreed security standards for the health care sector to prevent unauthorised access to, and misuse of, health information held and transmitted in electronic form. The framework will also ensure the integrity of data held and transmitted electronically.
2. Develop mechanisms for promoting compliance with national health information security standards.

PROGRESS TO DATE

National security framework

NHISAC and Standards Australia's security sub-committee (IT14/4) are working to develop a national health sector security framework. It is anticipated that the framework will be available in early 2002.

The objective of this work is to develop a rigorous security framework comprising agreed security standards for the health care sector to prevent unauthorised access to, and misuse of, health information. The framework is being developed in collaboration with government, the health sector and industry. It will incorporate standards and guidelines to support the management of health information in an online environment, and will specify administrative and technical measures to safeguard electronic health information against loss, modification and inappropriate dissemination. It is likely that the framework will include security standards in the following areas:

- authentication of health care locations, individuals, health care workers and their roles;
- access to electronic health information;
- data management, transfer and use;
- data storage;
- data integrity; and
- system administration.

Security implementation guide

As part of the development of a national health information security framework, the Commonwealth Department of Health and Aged Care recommended to Standards Australia's Health Informatics Committee (IT14) that an implementation guide for information security management for the health sector be developed.

On the advice of IT14/4 (a sub-committee of IT14), the guide will be based on the Australian and New Zealand standard *AS/NZS4444.2:2000 Information Security Management — Specification for Information Security Management Systems*. The health sector guide is currently being developed. It will provide a mechanism for implementing this 'whole of industry' standard within the health sector, and will concentrate specifically on appropriate security provisions for various health care settings and provider types (eg hospitals, general practice, radiology, etc). It is anticipated that the guide will be available from March 2002.

Authentication

Secure communication with Commonwealth agencies is currently supported by the Government Gatekeeper project. Gatekeeper provides a framework for the use of Public Key Infrastructure (PKI) policies and technology within the Commonwealth Government. PKI provides a robust security mechanism that is being used to facilitate secure online communication between the health sector and Commonwealth agencies such as the Health Insurance Commission (HIC) and the Commonwealth Department of Health and Aged Care.

To further support the use of PKI in the health sector, the Health eSignature Authority (HeSA) has been established, enabling the health sector to safely transmit information online. HeSA was established early in 1999 as an independent subsidiary of the HIC.

HeSA obtained Gatekeeper accreditation on 19 January 2001 and was officially launched in March. The first HeSA digital certificates were issued to health care providers on 21 February 2001.

In gaining gatekeeper accreditation, HeSA was required to establish policies to ensure the privacy and security of information handled by the Authority. These policies are based on the Information Privacy Principles contained in the *Privacy Act 1988*, and are available from the HeSA website <http://www.hesa.com.au>.

Gatekeeper accreditation enables members of the health sector to:

- register for the technology that will allow them to transmit confidential information electronically;
- have complete confidence that both PKI and HeSA provide levels of security that guarantee not only the confidentiality of messages sent, but also that all information about the users of the PKI system will be secure; and
- develop, test and implement a range of best practice health applications without compromising security.

As soon as an organisation or health care professional is registered with HeSA, they will be able to communicate securely with other organisations or individuals

registered with the Health eSignature Authority. This will provide a range of benefits. General practitioners, for example, will be able to send patient referrals via e-mail and be confident that the information sent will remain completely secure and confidential. PKI can also provide approved health professionals with secure and confidential access to national registers such as the Australian Organ Donor Register.

HeSA's role is to establish the identity of the applicant and follow strict guidelines to ensure privacy. Once the identity of the applicant has been established according to the 'evidence of identity' criteria, HeSA will generate the digital keys and forward a request to the certificate authority to generate a digital certificate. Digital certificates and keys make up the electronic passports that identify the sender and recipient of information exchanges under a PKI system.

Health professionals can apply to HeSA for health care location certificates, or health care individual certificates.

PROPOSED ACTIONS

1. Standards Australia is to:
 - develop an implementation guide to the security standard AS/ANZS4444 for the health sector as an IT14/4 security sub-committee work item;
 - seek NHISAC's support for the implementation guide to be adopted and promoted widely across the health sector;
 - review the membership and sectoral representation of IT14's security sub-committee as the committee supervising the development of a security framework for the health sector, and make suggestions for additional member organisations to achieve wider representation;
 - develop a communications strategy to encourage health organisations to seek accreditation of their information security management systems; and
 - through IT14's security sub-committee, continue to progress the development of a robust security framework for the health sector to protect health information against loss, modification and inappropriate dissemination.
2. Appropriate stakeholders (eg State and Territory health authorities, professional associations and private health industry bodies) are to make recommendations to IT14/4 on the need for certification and registration authorities for the health sector.

3. Appropriate stakeholders are to make recommendations to IT14/4 on the requirements, roles and responsibilities of certification or registration authorities for the health sector. These recommendations should take into account the requirements of electronic health records.
4. NHIMG is to develop a discussion paper that identifies the requirements for statistical reporting and point-of-care record linkage.
5. NHISAC is to investigate mechanisms for ensuring compliance with endorsed security standards.

TIMETABLE

1. National health sector security framework — March 2002.
2. Stakeholders' recommendations to IT14/4 for implementing a health sector certification and registration authority (or authorities) — late 2001.
3. Stakeholders' recommendations to IT14/4 for implementing authentication and non-repudiation for health messages — late 2001.
4. NHISAC to explore mechanisms to promote compliance with standards — September 2001.

RESPONSIBILITY

Commonwealth Department of Health and Aged Care, State and Territory health departments, HIC, Standards Australia's IT14 sub-committee, NHIMG, and other key stakeholders, for example, professional organisations.

3.1.3 Health care identification

CONTEXT

Currently, the majority of health records are held on paper files and often dispersed over a number of locations (eg in general practitioners' offices and hospital basements). This means that a person's health information cannot easily be brought together at the point of care (where it is often needed urgently) leading to an incomplete picture of the person's medical history. Access to all relevant parts of a person's medical record at the point of care is central to good clinical decision-making. New and emerging technologies, such as the national health information network proposed under *HealthConnect* (section 5.1.1), have the potential to substantially improve access to clinical information by enabling the flow of health information across the health sector.

However, unless the transfer of clinical information, such as prescription data or immunisation histories, is accompanied by a foolproof system of identification

there is the potential for serious misadventure and adverse patient outcomes. As health consumers and health care professionals start to base their decision-making on health information exchanged electronically at the point of care, it is imperative to be certain of:

- the identity of the person to whom the information relates — the ‘patient identifier’ or ‘health identifier’ or ‘health key’;
- the identity of the person who created each piece of information — the ‘provider identifier’; and
- the identity of the facility or location from which the information originated — the ‘facility identifier’.¹³

To maximise the potential for information exchange in an electronic world, the tools for identifying people, providers and locations need to be both accurate and instantly verifiable at the point of care. In this section issues relating to identification are discussed, rather than the wider issues of proof of identity and authentication processes, which are considered under section 3.1.2.

Health identifier or health key

Over recent years the need to electronically transfer individual clinical information in a reliable manner has become the major driver for the establishment of a personal health identifier or ‘health key’.

In addition to the benefits for clinical decision-making and improved accuracy for data linking that can be gained from the use of a unique identifier for each health consumer, other benefits include:

- improved continuity of care (by being able to bring together records held in different locations across the health sector);
- better information for research, planning and policy purposes;
- greater administrative efficiencies (by being able to bring data together more quickly and more accurately); and
- enhanced privacy (by being able to bypass additional identifiable information such as name and address when linking information for secondary purposes).

Consumers and providers, while recognising the need to develop a reliable means for identifying individuals, have concerns regarding associated privacy and security arrangements. In particular, concerns have been raised regarding the need to ensure that the use of a health identifier does not extend to other

¹³ National Electronic Health Records Taskforce 2000

sectors (ie that there is no 'function creep' over time). Therefore, before any health identifier is implemented, adequate safeguards would need to be in place to ensure appropriate usage. Such safeguards would likely need to meet the following criteria:

- use of a health identifier would be limited to the health sector;
- participation by consumers and providers would be on a voluntary basis; and
- a robust privacy/legislative framework would have to be in place to limit the circumstances in which a health identifier can be used (with appropriate penalties in place for misuse).

Provider identification

As well as being able to accurately identify health consumers, it is also essential to be able to uniquely identify health care providers. In addition to ensuring that information is only accessed by the provider (at a particular location) authorised by the consumer, a provider identifier can also ensure that a provider is a *bona fide* health professional (through links to professional registration bodies or other appropriate sources). Accurate provider identification is also needed for reasons of professional accountability (such as establishing duty of care), for facilitating efficient payment of any relevant professional fees or rebates, and for ensuring that information is sent to the appropriate person at the correct destination.

Facility/location identifier

Any system of electronic health records would need to be able to provide access to information from the location at which it is stored and to transmit information to the location at which the information is required. To facilitate such information exchange, an accurate and unique way of identifying each location/facility is required.

A facility may be defined in a number of ways, including:

- the location at which services are actually provided;
- the location at which health records are electronically stored; or
- a combination or linkage of these locations.

A facility identifier would also differentiate between locations at which a service is rendered by a particular provider, as well as distinguishing between providers rendering the services at a specific location.¹⁴

¹⁴ National Electronic Health Records Taskforce 2000, pH7.

OBJECTIVES

1. Gain agreement to the establishment of a system of reliable identification for health consumers, providers, facilities and locations.
2. Develop national standards for entity identification.

PROGRESS TO DATE

Safe patient identification was an issue canvassed by the National Electronic Health Records Taskforce in the context of advising Health Ministers on a national approach to electronic health records. The Taskforce recommended the establishment of a national health identifier, to be used only in the health sector under strict privacy controls and implemented concurrently with the proposed national health network, *HealthConnect*.

The announcement to proceed with the research and development phase of *HealthConnect* (in the context of the 2001–2002 Federal Budget) will see the adoption and evaluation of local-level identification systems. The longer-term requirement for a national health key will require further work and public discussion.

Some States and Territories, such as the Northern Territory, have developed systems of patient identifiers based on Master Patient Indexes, which combine demographic data with a unique identifier. Other jurisdictions are also in the process of developing such indexes.

Under Standards Australia/Standards New Zealand, a Person Identification Working Group (IT14/9/3) has been established to develop a Health Care Client Identification Standard. This work was initiated as a result of industry concern regarding the many different data storage formats used for basic client identification data. The objective is to provide the health industry with a standard for positive health care client identification and for clinical and administrative data management purposes.¹⁵ The Standard defines demographic information, other identifying data elements (eg hospital record numbers) and identifiers authorised for collection under law for such purposes as determining eligibility for services that are suited for use for client identification in health care settings and provides guidance on their application.

¹⁵ IT14/9/3 Health Care Client Identification Standard 2000.

PROPOSED ACTIONS

1. Progress the privacy issues associated with the use of a personal health key in the context of the broader action on privacy matters (see section 3.1.1).
2. Undertake further work through NHIMAC on the potential and options for a personal health key.
3. Finalise a national standard for patient identification under IT14/9/3.
4. Progress national standard for provider identification under IT14/9/3.

TIMETABLE

1. Undertake further work on a personal health key — 2001/2002.
2. Publication of a national standard on health care client identification by IT14/9/3 — December 2001.
3. Publication of a draft standard for provider identification by IT14/9/3 — November 2002.

RESPONSIBILITY

Commonwealth Department of Health and Aged Care, HealthConnect Program Office, NHIMAC, Standards Australia (IT14/9/3), Commonwealth Attorney-General's Department, Federal Privacy Commissioner, the HIC.

3.1.4 Future work

HEALTH CARE PROVIDER LOCATION DIRECTORY

In the context of an increasing need to collect and share information across health settings, the provision of directory services covering all health care providers has been identified as essential to establishing the foundation for better communications in the health sector. An important aspect of this need for better communication is the development of a plan to deliver health care provider and locations directory services.

The HIC has commenced a Business Improvement Program, which involves re-engineering HIC systems to ensure reliable, speedy and secure transmissions utilising the web (see also section 6.1.4). As part of this process the HIC is re-developing its consumer and provider directories for use by all internal HIC systems and information products, enabling a speedier development of new products and services as well as easy access to information on entitlements.

The provider directory is planned to be the central master repository of all HIC data relating to holders of provider registration numbers, including doctors, pharmacists, optometrists and specialists. A complementary location directory is also to be developed, which will store information about the location of provider facilities, such as doctor's surgeries, pharmacies and hospitals.

3.2 Develop national standards for health information management and information technology that are compatible with international standards activity

3.2.1 Develop standards for information management activities and for information technology systems

CONTEXT

If information generated in one system is to be capable of being understood by another, wherever that system is located, it is necessary to develop national standards for health information management and information technology that are compatible with international standards.

Health is an information-intensive industry that arguably depends more on information than industries such as finance and banking. Yet current use of common standards in the health care sector in Australia (and overseas) is basic compared with other industries. Nonetheless, it is clear from the current global and national economic climate, the increasing number of competing demands, the fast pace of change associated with the Internet, and the growing importance of information and communication technologies in health care, that the health sector will need to settle on common standards. With the creation of the National Health Information Standards Advisory Committee (NHISAC), a sub-committee of NHIMAC, and publication of *Setting the Standards: A National Health Information Standards Plan for Australia*, the time is right to progress standards issues nationally and, in doing so, lay the foundation for change in the emerging e-health environment.

National standards are required to contribute to the quality, safety, efficiency and effectiveness of health care delivery by health care providers to consumers. This point was made in a joint report by the Royal Australian College of General Practitioners (RACGP) and the Medical Software Industry Association (MSIA). According to the 1995 report, entitled *Standards and Accreditation for General Practice Information Systems — Scoping Project*:

Standards in general practice information management contribute significantly to a better practitioner working environment [and] better or more accessible information pertaining to patients and their health problems. [Standards] will work to ensure that components will work appropriately, will work in concert with one another where appropriate, and will perform tasks according to a level of efficiency and reliability that is of assistance and utility to the general practitioner¹⁶ as an individual and the general practice community as a whole.

While this statement is limited to the general practice setting, it can be broadened to include all sectors and disciplines of health care. The European Standards Committee has made a complementary statement from an industry perspective:

In conventional sectors of industry, standards are well known for increasing companies' market opportunities and for lowering the cost of equipment and services to users. The same arguments hold for the field of health care informatics, where European industry currently supplies to a fragmented market, products that have a short life cycle and are over-customised and therefore expensive to develop, to buy, and to maintain. Agreement on common requirements will reduce the cost of healthcare information systems and open up the market.¹⁷

Within this context, and as a joint industry and Commonwealth–State priority, national health information standards need to be progressed in a systematic, cooperative and coordinated way in Australia. That is, to establish a successful system of electronic health records in Australia, and to avoid the potential for incompatible systems and duplication, a consistent national approach is needed based on uniform standards. Thus for major initiatives such as *HealthConnect* to be efficient and effective, the imperative is to develop, adopt and implement national standards that will support, for example:

- privacy and data protection;
- security and authentication;
- messaging and communication; and
- data definitions and associated coding and classification systems.

Without agreed standards, health information management would break down into smaller networks, isolating individual States or Territories, individual organisations such as hospitals, or even individual health care providers such as general practitioners.

¹⁶ Royal Australian College of General Practitioners and the Medical Software Industry Association 1995, *Standards and Accreditation for General Practice Information Systems — Scoping Project*, Canberra.

¹⁷ CEN/TC 251, 1996.

The interests of both providers and consumers of health services should drive proposed national standards. Unless, for example, electronic health records are useful to health care providers, user friendly, efficient, and acceptable to consumers, they will simply not be used. It is important, therefore, that workable standards be developed through close collaboration with a wide range of health care professionals, industry and consumer bodies, to ensure that the records will rapidly prove their worth for service delivery and for planning purposes. This requires agreement from key stakeholders on:

- the direction national standards development should take;
- what national standards should be developed (including those standards that need to be congruent with international standards);
- who should be responsible for developing national standards; and
- how the development of national standards should be funded.

It is also important that, wherever possible, work on Australian standards is congruent with activities to develop international standards.

Given their importance, national standards will underpin many of the action areas described in *Health Online*. The nature and the detail of standards that will be required will depend on the scope of projects in the plan. It is also true that online health transactions do not operate in isolation from other sectors that have embraced online technologies. In some areas of health, such as e-commerce, it may be possible to use generic standards rather than developing health-specific ones. In other instances, such as security and image transmission, existing standards developed for other industry requirements may need to be modified if they are to be applied satisfactorily in health settings.

OBJECTIVES

1. Maintain a coherent approach to health information standards that are adopted and implemented on a national basis.
2. Establish inclusive processes for the ongoing identification of activities to develop national and, where appropriate, international standards.
3. Identify, at a national level, the standards work required for moving to electronic platforms in line with *Health Online* and *HealthConnect* policies and projects.
4. Gain wide support for, and involvement in, national standards activities among key stakeholders.
5. Identify and eliminate barriers to the development, adoption, implementation and 'uptake' of national standards.

6. Coordinate activities to develop standards to ensure that scarce resources are used effectively.
7. Review current activities to develop international standards and determine a national strategic approach for Australia's involvement in, and funding of, international standards research and development.

PROGRESS TO DATE

National Health Information Standards Advisory Committee (NHISAC)

Australia is pursuing a national approach to health information, data and technical standards with the aim of avoiding duplication of effort and resource costs caused by the development of incompatible systems. This national agenda is being progressed by NHISAC. NHISAC has already played an influential role in advising Australian Health Ministers on priorities for the national and international development and implementation of health information standards through the publication of *Setting the Standards: A National Health Information Standards Plan for Australia* (also referred to as the *Standards Plan*).

The committee has also strengthened critical ties between key stakeholders, including the national specialist standards groups: NHIMG, IT14, the GPCG, and the ANZ CIO Forum.

Broadly speaking, NHISAC is responsible for:

- Providing strategic advice on national health information standards at the highest level of government.
- Negotiating agreement between the specialist standards groups on the respective standards-related roles of IT14, NHIMG, the ANZ CIO Forum and the GPCG.
- Overseeing the development, coordination and implementation of national health information standards.
- Establishing inclusive processes for:
 - the ongoing identification of priorities for activities to develop national and (where appropriate) international standards, including periodic update of the *National Health Information Standards Plan for Australia*;
 - coordinating activities to develop standards to ensure that scarce expert resources are effectively utilised; and
 - advising Health Ministers on priorities for national implementation of health information standards based on the advice of the relevant expert groups.

- Examining compliance and accreditation issues and reporting to Health Ministers on the most appropriate mechanism for national adoption of standards.

A major focus of the committee will also be to consider strategies for change management. Such strategies include:

- identifying and eliminating barriers to the implementation of agreed national standards; and
- education and training activities as well as communications strategies that may be required to support the implementation of agreed national standards.

NHISAC's position as the national peak standards body means that it is well placed to consider national policy issues to bring about an integrated national approach to standards issues. This is particularly important to ensure that the standards developed by specialist groups and other interested organisations are not advanced in isolation of either the broader policy agenda, such as coordination of care, or general industry trends, such as e-commerce. It is also important that broader links be established to the community services sector and to wider national/international standards for technical interoperability of information systems. NHISAC's full terms of reference and membership listing (which includes industry and consumer representation) can be found at Appendices A and B of the *Standards Plan*, which itself is available on the Internet at: www.healthonline.gov.au/healthonline/standardsplan.htm.

Setting the Standards: A National Health Information Standards Plan for Australia

Setting the Standards: A National Health Information Standards Plan for Australia (published in February 2001) provides stakeholders with a national position on standards directions for the health care sector and the basis for further investment of effort and resources. It is a key policy document that formalises the importance of national standards in achieving an integrated approach to health information management and information technology (IM/IT). The organisations listed in the plan as responsible for the development of national standards support the development of required national standards.

The *Standards Plan* has been developed by the Commonwealth Department of Health and Aged Care and Standards Australia's Health Informatics Committee (IT14) on behalf of the National Health Information Management Advisory Council (NHIMAC) as one of a series of action papers arising from the original version of *Health Online*. It is a paper developed as a national action plan for the health care sector, in consultation with key stakeholders, including the HIC, Australian Institute of Health and Welfare (AIHW), IT14, NHIMG, the ANZ CIO Forum, the GPCG and the Office of the Federal Privacy Commissioner.

It has also drawn on the output of two national standards workshops that were run by the Commonwealth Department of Health and Aged Care (August 1998 and July 1999).¹⁸

The *Standards Plan* aims to provide the basis for a national strategic approach to the development of health information standards. It will address the ongoing demand for a standards-based framework to permit communication between different information systems throughout the health care sector, so that health information can be interpreted regardless of its origin. The areas for national standards development identified in the plan have been defined by the vision and direction of key policy themes in *Health Online*. That is to say, the standards identified in the document are driven by national policy imperatives. The three themes (from *Health Online*) that underpin the structure of the action plan set out in Part B of the *Standards Plan* are:

- Empowering consumers and communities for better health.
- Better management of clinical information to support care.
- Using information to build a more efficient and effective health care system.

Setting the Standards: A National Health Information Standards Plan for Australia does not aim to be a comprehensive statement of all information standards activities required for the health care sector, but it does set out to describe key activities that need to be undertaken at a national level. In this sense it is a 'baseline' plan. New proposals for national standards development can be incorporated as related work and activities establish their importance and requirements.

The *Standards Plan* is therefore intended to be a 'living document', requiring updating and monitoring over time. NHISAC will update and modify the plan periodically in its capacity as the expert body established to advise NHIMAC on the ongoing identification of priorities for the development, coordination and implementation of health information standards on a national basis. Thus NHISAC and NHIMAC will influence the development of subsequent versions of the plan.

A two-year timeframe is proposed for activities identified in the current version of the *Standards Plan*.

¹⁸ Commonwealth Department of Health and Family Services 1998, *Report of the National Health IT Standards Workshop*, Commonwealth of Australia, Canberra.

Commonwealth Department of Health and Aged Care 1999, *The National Health IT Infrastructure Initiative IT Standards Workshop, Health IT Standards Workshop, Final Report*, Commonwealth of Australia, Canberra.

Addressing barriers to the adoption of national standards

NHISAC has already established processes for advising government on important issues that might impede the adoption of national standards and how such barriers might be addressed through, for example, government and private partnerships. In addition, the committee has engaged a consultant to assess and make recommendations on:

- The options available to address current problems with widespread adoption of national health information standards.
- The role of accreditation and certification in promoting adoption of national standards, within the context of the overall options (preceding dot point). Specifically, how accreditation and certification can contribute to improving the adoption of national health information standards, and including options the National Health Information Standards Advisory Committee (NHISAC) can pursue in this regard.

The consultancy is expected to be completed by the end of September 2001.

Review of international standards development activities

The Commonwealth, State and Territory Governments have been working closely with national standards organisations such as Standards Australia to encourage the development of Australian and international standards in harmony. The main benefit of harmony is that it can ensure that international standards that provide developers with a basis for designing future software also address Australia's needs, reducing the need for later modification. Other benefits of Australia conforming to international standards include: making the international exchange of health goods and services easier; benchmarking against international standards, which generally reflect the best experience of industry worldwide; and making participation in international accreditation schemes easier.

In acknowledgment of these potential benefits, Australian representatives have been supported in attending international forums in recent years — in particular, Health Level 7 (HL7) and the International Standards Organization (ISO/TC215) meetings. This support has come from the Commonwealth and by those organisations providing the participants' expertise, principally state health authorities and the private sector. It is not yet clear, however, to what extent Australia needs to be involved in international standards development activities to achieve harmony. International activities have the potential to expand and consume substantial resources.

The development of the *Standards Plan* provides an opportunity to review and potentially refine Australia's current involvement in these international activities. Until recently, there has not been a clearly articulated policy framework within

which national standards are developed, including those standards that need be consistent with international standards. It is therefore appropriate that current international activity be reviewed at this time. A review of funding arrangements (ie the level of Commonwealth funding, alternative sources of funding, etc. for international activities) will be part of the review of activities to be initiated by the Commonwealth Department of Health and Aged Care. It is expected that the review will be undertaken by September 2001.

The Commonwealth Department of Health and Aged Care has also commenced discussions with Standards Australia and other organisations about the need for a sustainable business model. That is a model that provides a way to fund standards development activities (national and international) without relying solely on public sector contributions and that is acceptable to both the private and public sectors.

PROPOSED ACTIONS

General

1. NHISAC to support a coherent national approach to standards development, by progressing the objectives and actions outlined in the *Standards Plan*.
2. NHISAC to encourage the adoption of agreed standards nationally.
3. NHISAC to hold a series of information sessions nation-wide to:
 - widely publicise its role, the ongoing importance of a national health information standards plan for Australia, and the formal processes for the identification and adoption of national standards; and
 - seek feedback from participants on change management issues and their views on the type of education and marketing strategies that should be employed to facilitate the adoption and 'uptake' of national standards.

Funding national standards development

4. Standards Australia and Commonwealth Department of Health and Aged Care to develop a sustainable business model for standards developed through Standards Australia, in consultation with the ANZ CIO Forum.
5. Commonwealth Department of Health and Aged Care and ANZ CIO Forum to negotiate a cost-share agreement to form the basis of public sector commitment to national standards development.

Standards to support better clinical care

6. Specialist standards groups to progress work on standards to support better clinical care according to the work plan set out in the *Standards Plan*. These standards include:

- structural and architectural requirements for a national approach to electronic health records;
- privacy;
- security and authentication;
- messaging and communication;
- data standards, classification and coding systems;
- electronic decision support;
- telehealth; and
- electronic prescribing.

Contributing to international standards development

7. Conduct a review of Australian involvement in international standards development activities to:
 - ensure that Australia is appropriately represented at international forums;
 - ensure that international activities align with national policy directions as set out in *Health Online* and the *Standards Plan*; and
 - inform the development of a national strategic approach to future involvement in international standards activities.
8. Develop an agreed national strategic approach for involvement in international standards research and development.
9. Undertake consultancy on barriers to the adoption of national standards.

TIMETABLE

Ongoing

RESPONSIBILITY

NHISAC. Other agencies with an interest in national standards issues, including Commonwealth Department of Health and Aged Care, the HIC, the specialist standards groups, namely IT14, NHIMG, ANZ CIO Forum, and the GPCG.

3.2.2 Establish a process for endorsing standards on a national basis

CONTEXT

Some standards emerge because of the market dominance exerted by a single product — the use of the *Windows* operating environment for IBM computers is an example. Other standards are made mandatory by governments (and enshrined in legislation) because a clear public interest issue is at stake to the extent that it becomes an imperative to act. The kind of standards that have been described above (section 3.2.1) as being essential for the development of significant information management activities in the health sector, such as the growth of e-commerce, fall between the likelihood that market forces will deliver the right outcome and the need for public intervention. If it were left to the market, in all probability a set of standards would emerge. The assistance that the Commonwealth Government has provided in the form of standards workshops and more recently, publication of *Setting the Standards: A Health Information Standards Plan for Australia*, can also speed this process, but the cost in delays and ‘false starts’ could still be substantial. A strategy for endorsing, though not necessarily mandating, the standards that stakeholders agreed to would achieve a working partnership between the market driven and government mandated approaches. This would require agreement about what standards need to be endorsed at a national level, and input from key stakeholders to achieve wide support for the standards that are so endorsed.

OBJECTIVE

Establish a process for endorsing standards for adoption on a national basis in the health sector.

PROGRESS TO DATE

Development of *Setting the Standards: A National Health Information Standards Plan for Australia* and the establishment of NHISAC paved the way for a review of the way in which the health sector manages processes for endorsing standards for adoption on a national basis within the sector.

As indicated in section 3.2.1, NHISAC will work closely with Australian Health Ministers through NHIMAC to promote the adoption of agreed national standards within the health sector. NHISAC’s membership provides the appropriate links with government and industry. Through this mechanism, the committee should be in a position to promote agreed national standards, coordinate ongoing enhancements and support recommendations to AHMAC on

implementation issues, based on advice from relevant specialist standards groups, including IT14, NHIMG, ANZ CIO Forum and the GPCG.

NHISAC is intended to complement, not undermine, the integrity of the standards processes of the existing specialist standards groups. The important task of establishing a practical process for formally identifying and supporting particular standards for adoption is still evolving. The aim is for national standards to be agreed among the relevant players in the Australian health system. Public sector endorsement should be able to be achieved through AHMAC processes, with relevant non-government players to use standards set in this way. NHISAC can play a significant role in ensuring this approach results in nationally consistent decisions, and can ensure AHMAC and, if necessary, Health Ministers are advised of irreconcilable differences. Standards recommended for adoption at the national level would be those that:

- are included in the *Standards Plan* (or have been recommended for inclusion); and
- meet the objectives of the national agenda for moving to electronic platforms in line with identified *Health Online* and *HealthConnect* policies and projects.

PROPOSED ACTIONS

Develop a NHISAC paper setting out the formal processes for endorsing standards for adoption on a national basis in the health sector, to be distributed to all agencies with an interest in national standards issues.

TIMETABLE

Paper to be prepared for NHIMAC by late 2001.

RESPONSIBILITY

NHISAC, NHISAC Secretariat.

3.3 Advance the growth of infrastructure needed to increase access to online health services

3.3.1 Increase the affordability of and access to telecommunications services in rural and remote Australia

CONTEXT

Telecommunications infrastructure issues in the health sector are similar to the issues experienced in other areas such as education. The main concerns relate to the inequalities between metropolitan and regional Australia in the availability of services, their cost and quality. Access to Internet services outside metropolitan areas has traditionally cost more because of a lack of local call access to Internet Service Providers (ISPs), fewer points of presence, and pricing arrangements of ISPs. In addition, people in more remote areas often do not have access to telecommunications services of comparable quality.

In addition to these issues, which the health sector shares with other users targeting the 'bush', the sector has specific requirements. These can arise, for example, from the important role that video-conferencing can play in remote service delivery (requiring access to a 2 x 64 Kbps service), and the demands of imaging technology, which needs the capacity to process and transmit high-resolution digitised images. The remote delivery of health services also requires greater reliability than might be the case for other industries.

While the health sector has much in common with other sectors seeking to extend access to high quality telecommunications services in rural and remote areas, generally it has not developed the same level of coordination achieved by other areas. The Australian New Zealand Telehealth Committee (a committee of AHMAC and later, of NHIMAC) has undertaken some work in this area — but the education sector, for example, has maintained a Commonwealth, State and Territory approach for some time to this and other issues through Education Network Australia.

Further impetus to act in this area comes from the National Electronic Health Records Taskforce. Its report, *A Health Information Network for Australia*, which was adopted by Health Ministers in July 2000, recommends that a national health information network be built to support a system of electronic health records.

OBJECTIVE

Work to secure affordable access to quality telecommunications services for the health sector to serve consumers irrespective of where they live.

PROGRESS TO DATE

As access and cost issues are not confined to health, pressure for action has come from a broad range of interests. In response, the Commonwealth Government has included a requirement for the provision of 64 Kbps ISDN services to at least 96 per cent of Australia in its Digital Data Service Obligation, as part of the Universal Service Regime. The cost-effectiveness of satellite communications will also need careful consideration as an alternative to laying down ISDN cable lines across vast expanses of outback Australia. A comparable service using satellite technology is envisaged for areas not able to obtain ISDN services.

The Commonwealth Government has also supported the delivery to all Australians of untimed local calls and untimed local call access to the Internet. It has allocated \$150 million from the second tranche sale of Telstra to extend the benefits of untimed local calls to all Australians. This would involve upgrading remote telecommunications infrastructure to support the provision of untimed local calls, untimed local call access to the Internet, and concessional timed preferential rate calls to Community Service Towns (country centres that provide a reasonable combination of basic business and domestic services).

The Commonwealth Government called for tenders on 5 October 2000 for the \$150 million to provide the required services and any enhancements to the extended zones. Telstra has been selected as the preferred tenderer and is negotiating an agreement with the Commonwealth Government.

The Commonwealth Government's Regional Telecommunications Infrastructure Fund, Networking the Nation, is also aimed at improving infrastructure arrangements in regional Australia. Networking the Nation is a five-year, \$250 million program that assists the economic and social development of regional, rural and remote Australia by funding projects that:

- enhance telecommunications infrastructure and services in regional, rural and remote areas;
- increase access to, and promote use of, services available through telecommunications networks in regional, rural and remote areas across Australia; and
- reduce disparities in access to such services and facilities between Australians in regional, rural or remote areas and those in urban areas.

Examples of projects funded by the Networking the Nation Board include:

- the Western Australia Telehealth Pilot project, which will trial the delivery of telehealth services to a minimum of twenty sites across Western Australia by providing access to modern, sustainable and economical telecommunications and information technology; and
- the South East Health Service Video Conferencing project in Mt Gambier, South Australia, which is conducting a trial of videoconferencing services for isolated and small rural health units in Mt Gambier and the South East region of South Australia.

The Commonwealth Department of Health and Aged Care has also initiated projects that are intended to improve information technology infrastructure to help provide better quality of care and more efficient administration practices. The 2000–01 Budget measure 'Bush Nursing, Small Community and Regional Private Hospitals' was initiated to improve the long-term viability of eligible hospitals and the stability of the rural private hospital sector. The national pilot of the program commenced with five such hospitals in the Darling Downs area of Queensland and has been extended to hospitals in Victoria, NSW, South Australia, Western Australia, Tasmania, and other areas of Queensland. As one part of a coordinated package of support, the Commonwealth is providing funding to purchase equipment to meet immediate information technology needs as well as training in hardware and software packages.

Another example is provided by the Office for Aboriginal and Torres Strait Islander Health. The Office has developed a strategy to assist Aboriginal community controlled health services in improving patient management and health service planning. The Patient Information Recall System project supports implementation of computerised patient management systems that facilitate population health initiatives (health checks, screening and early intervention activities) as well as improve management of chronic diseases, such as diabetes. To date, the Office has provided over \$6.7 million to support the costs of purchasing and implementing computer hardware and recall system software in community controlled health services across Australia.

In a wider context, in March 2000, the Commonwealth Government commissioned the Telecommunications Service Inquiry. The report of the inquiry, *Connecting Australia — Report of the Telecommunications Service Inquiry*¹⁹ (also known as the Besley report) was published in September 2000. It made a number of recommendations to improve telephone, mobile phone and Internet services in regional Australia. In its response to the telecommunications

¹⁹ Telecommunications Service Inquiry 2000, *Connecting Australia — Report of the Telecommunications Service Inquiry*, Commonwealth of Australia, Canberra.

service inquiry on 15 May 2001, the Commonwealth Government announced the establishment of the National Communication fund. This initiative will provide \$52.2 million to support significant telecommunications projects in regional, rural and remote Australia that involve the education and health sectors.

The States and Territories have also made regional access issues a priority. Some States and Territories are aiming to use resources from the National Health Development Fund to extend telecommunications infrastructure. They have also collaborated on a whole-of-government (ie Statewide) basis rather than within specific industry sectors. The ANZ CIO Forum has also put forward a proposal to NHIMAC to establish a National Telecommunications Infrastructure Working Group. NHIMAC has supported the initiative and is consulting with AHMAC to determine the reporting lines for the working group.

PROPOSED ACTIONS

1. Establish the NHIMAC/AHMAC Telecommunications Infrastructure Working Group. Undertake a needs analysis of the telecommunications infrastructure requirements for the health sector, noting the particular needs for specific applications such as telehealth. Develop a state-by-state and Commonwealth audit and future needs assessment and funding requirements study for submission to potential funders.
2. Monitor progress in implementing the report of the Telecommunications Service Inquiry and its links with the findings of the NHIMAC/AHMAC Working Group.

TIMETABLE

1. Establish the NHIMAC/AHMAC Working Group — July 2001.
2. Undertake needs analysis and audit of telecommunications infrastructure issues — December 2001.

RESPONSIBILITY

NHIMAC/AHMAC, Commonwealth, State and Territory health departments.

3.3.2 **Develop a set of workable incentives and support systems to address key infrastructure and standards barriers to increase the take-up of information technology and associated information management strategies by general practitioners**

CONTEXT

In 1998, the General Practice Strategy Review Group called for greater recognition by key stakeholders of the crucial role the enhanced uptake of information management and information technology²⁰ has played in improving the quality of care delivered by general practitioners.

The Commonwealth Government had previously commissioned research on the barriers to the wider uptake of computers for clinical purposes in general practice.²¹ Some of the key barriers identified were concerns regarding: costs (including financial, time and effort); lack of computer skills and literacy; privacy and confidentiality; actual direct benefits to general practitioners; reliability and potential obsolescence of software and hardware; and the lack of appropriate software applications.

Following the General Practice Strategy Review, \$15 million over three years was allocated in the 1998–99 Budget for information management and information technology initiatives to support the advancement of general practice information technology. The *General Practice Information Management and Technology Strategic Framework 1999* was subsequently developed as the means for distributing this allocation. The Framework sets out the aims and areas of activity for general practice computing between June 1999 and June 2001. It was developed in partnership between the Commonwealth Department of Health and Aged Care and the General Practice Computing Group (GPCG), the peak body representing general practice on computing issues.

The 1998–99 Budget initiatives on general practice information management and technology were focused on managing the introduction of new technology into general practice. Work undertaken in this context had two primary aims. One was to provide general practitioners with access to adequate information technology training and support services. The other was to commence work that would enable key standards to be put in place so that general practitioners and

²⁰ General Practice Strategy Review Group 1998, *General practice: changing the future through partnerships*, Commonwealth of Australia, Canberra.

²¹ AC Nielsen 1998, *A study into levels of, and attitudes towards, information technology in general practice*, Research consultancy report prepared for General Practice Branch, Department of Health and Aged Care, AC Nielson Research, North Sydney, NSW.

other health care providers can exchange information electronically in a reliable and consistent way.

The Commonwealth Government's focus for general practice for the next phase of activity is on better information management to improve patient care. Information management is the capacity to collect, access, analyse and communicate information so as to improve decision making. Effective use of information management can assist in achieving better population health outcomes by enabling general practitioners to enhance their approach to chronic disease and preventative health measures.

The focus of the work of the GPCG over the next three years will be to support better health outcomes for the Australian community through the effective use of information management systems. The GPCG will also continue to work on the development and implementation of standards, coding, decision support and systems issues to ensure that general practitioners benefit from information technology through access to the latest health and patient information. The GPCG has drafted its second strategic framework, which lays out a framework for strategic activities in general practice information management and technology over the next few years. The framework is currently being considered by the Commonwealth Department of Health and Aged Care and the GPCG Management Committee. A number of projects have also been funded through the Commonwealth Department of Health and Aged Care during the first half of 2001 to provide a comprehensive picture of information technology and management uptake and implementation issues in general practice. The majority of these projects are providing reports during June and July 2001 and the information provided will further inform future work in this area.

OBJECTIVES

1. Further increase the uptake of information management and information technology applications in general practice by facilitating the development of the necessary standards and communications infrastructure (see also section 3.2.1).
2. Implement strategies to encourage the development of modular software for electronic prescribing, clinical decision support and communications that meet appropriate standards for general practice (see also section 5.1.3).
3. Continue to implement strategies that provide support, training and education to general practitioners as they make the transition to electronic management of clinical and other information in their practices.
4. Facilitate decision making on the basis of the best evidence available.

5. Implement information management activities that will support the strategic directions in health care in Australia.

PROGRESS TO DATE

- The formation of partnerships between key stakeholders through the establishment of the GPCG has ensured cooperation and support for implementation strategies, including agreement on resource contributions and identification of priorities. Work is in progress to support the development of standards for disease and treatment classifications, electronic prescribing and electronic messaging between hospitals, general practitioners and other health care providers.
- Significant funding has been provided to Divisions of General Practice to provide and enhance training and support activities to general practitioners in the area of information management and technology. This funding allowed divisions to support the provision of services to general practitioners, including training, brokering hardware and software between general practitioners and commercial providers, and promoting appropriate information technology system usage to general practitioners. Funding for Divisions of General Practice has been extended until the end of 2001 and will now be directed towards information management activities that improve patient care.
- The General Practice Coding Jury was established in 1999 to identify a standard code set suitable for clinical classifications for general practice. The findings of the coding jury have been presented in a report titled *Final Report of the General Practice Coding Jury* (August 2000). The report provides details of the requirements, definitions, comparative process and evaluations undertaken by the Jury. This process also identified a range of issues related to the implementation of a code set for general practice that will inform the establishment of coding standards. The report has recommended the adaptation and use of ICD10 AM in the short term, with a view to the implementation of SNOMED CT in the longer term. Work has commenced on implementing these recommendations, including investigation into overseas links.
- A comprehensive data model for use in general practice, and an associated data dictionary that will allow all those developing information technology systems to gather information in the same way, has been developed and is currently being trialed. The data model also provides a 'super set' of data, allowing those working in particular areas (eg asthma) to develop 'minimum data sets' based on agreed definitions.
- The Electronic Health Record Architecture project is investigating a mechanism that will allow users of different clinical systems to share data on patients. HealthConnect, the proposed national health information network,

also has an interest in this work with the prospect that it could underpin the record architecture for HealthConnect in the future. The potential for this record architecture mechanism is being examined across the world for its capacity to facilitate the reliable sharing of personal health information.

- Initiatives have been funded to consolidate the developmental work commissioned to date and also conduct several information management and technology integration trials in general practice. The majority of these projects are due to report in June and July 2001.
- In 2001, the GPCG, in collaboration with the Commonwealth Department of Health and Aged Care, funded a range of projects that aim to test, develop and implement the standards that have been developed to date.
- Additional assistance to general practices is also provided under the information management and technology component of the Commonwealth's Practice Incentives Program (PIP). This component is intended to support practices in providing better care through use of information technology for electronic prescribing and the interchange of electronic data. Payments are made for the use of *bona fide* electronic prescribing software to generate the majority of scripts, and for having on site and using a computer or computers connected to a modem to send and/or receive clinical data. All PIP-registered practices can qualify for either of these payments.

PROPOSED ACTIONS

1. Consultation is currently underway that will, if agreed, engage the Divisions of General Practice and their State-Based Organisations in:
 - promoting and raising awareness of the potential benefits that information management can bring to the clinical work of general practitioners and their practice management;
 - identifying the needs and expectations of general practitioners with regard to information management;
 - undertaking a stocktake of current information systems used by general practitioners (or likely to be used by them), and their capacity to utilise information management systems; and
 - identifying lead practices to act as peer education models for practices and/or general practitioners not familiar or confident with information management and information technology.
2. Develop a clinical classification code set for use in general practice in Australia based on General Practice Coding Jury recommendations, and investigate long-term solutions, including collaboration with overseas developments.

3. Develop and implement standards in accordance with *Setting the Standards: A National Health Information Standards Plan for Australia*.
4. Continue to assess and promote the use of effective electronic decision-support developments suitable for general practice.
5. Consider how information management systems can contribute to the practical implementation of the 2001–02 Commonwealth Budget initiatives, in particular, cervical cancer screening, diabetes and asthma.

TIMETABLE

1. Scoping exercise on general practice coding issues — to be completed in the second half of 2001.
2. Development and implementation of standards as part of the GPCG work program — over the next three years and in accordance with the timeframe set out in the *Standards Plan*.
3. Completion of a model for an electronic health record (general practice) within the framework recommended by the Taskforce on Electronic Health Records — by September 2001.
4. Facilitate implementation of information management practices in the identified priority health areas as part of the GPCG work program — over the next three years.
5. Subject to consultations with Divisions of General Practice and other stakeholders, the following timeframes for activities are envisioned:
 - Promote and raise awareness of the potential benefits that information management can bring to the clinical work of general practitioners and their practice management — first phase to be completed by the end of 2001.
 - Identify the needs and expectations of general practitioners with regard to information management and identify lead practices — by January 2002.
 - Undertake a stocktake of current information systems used by general practitioners or likely to be used by general practitioners, and their capacity to utilise information management systems — by January 2002.
6. Facilitate the use of information management applications with specific regard to priority health areas, eg diabetes, asthma and cervical cancer screening — over the next three years.

RESPONSIBILITY

A partnership among the Commonwealth Department of Health and Aged Care, State and Territory health authorities, the Medical Software Industry of Australia, GPCG and other key stakeholders.

3.3.3 Future work

HEALTH PORTAL

The Commonwealth Department of Health and Aged Care will develop a health portal as part of the establishment of a customer-focused portals framework endorsed by the Commonwealth Government in November 2000. The aim of the portals framework is to make it easier for people to find Commonwealth government information by placing information about government services in a customer-oriented framework, so that people can find the services they require without needing to understand how government is structured. It will be developed in collaboration with the National Office for the Information Economy and stakeholder agencies.

More information about the portals framework is available at: <http://www.govonline.gov.au/projects/services&innovation/portals.htm>.

INCENTIVES AND SUPPORT FOR OTHER PROVIDERS/DEVELOPMENT OF A SECTOR-WIDE STRATEGY FOR TAKE-UP

Future work should include identifying the key infrastructure and other barriers that exist for health care providers, other than general practitioners, in the health sector, and developing workable incentives to increase their uptake of information technology. This, together with the plans discussed in section 3.3.2, would form the basis for a sector-wide strategy for take-up.

NATIONAL PURCHASING ARRANGEMENTS

A cooperative approach to national tendering and purchasing could have many benefits — not the least being the ability to drive standards by occupying a prominent position in the market. This future work proposal involves the Commonwealth, States and the Territories investigating the possibility of cooperative tendering and purchasing along the lines of Education Network Australia. This issue should be taken up in the context of the National Telecommunications Infrastructure Working Group (discussed in section 3.3.1).

3.4 Training and support for health care workers and consumers to encourage uptake and use of information technology

Education and training are important issues to be addressed as part of the overall uptake of information technology. States and Territories have already recognised the importance of equipping students with information technology skills so that they can participate in the broader information economy. This will be critical in bringing about generational change. However, many potential users will not have the skills or confidence to access such technologies in the immediate future, particularly among older people and people in remote communities who will not have been exposed to them. Moreover, even those using computers in their work will need additional training in major applications as they are introduced.

3.4.1 Provide information and training for health care workers on the practical applications of information technology

CONTEXT

The Australian health care system is moving towards a more integrated and coordinated approach to care and is placing increasing emphasis on evidence-based decision making. The role of information technology in day-to-day clinical practice is becoming increasingly important for accessing and communicating health-related information. Clinicians are beginning to realise that their role and the quality of the care that they provide relies upon them participating in the electronic age to ensure access and overcome communication issues for a more effective health system.

One of the major impediments, however, to accelerating the uptake of information technology in the clinical workplace is a lack of support and training for individual practitioners in the use of computer hardware and software applications. The information technology skill base of many health care workers is low, and opportunities to enhance these skills — particularly in clinical software and data transfer capabilities — have been impeded by a lack of both ready support in day-to-day practice and relevant training opportunities. Activities that make information technology systems easier to use and give health professionals greater understanding of how information technology systems function in the workplace can encourage them not only to use computers in their practice, but also to accept information systems as being beneficial.

OBJECTIVES

1. Identify applications that have a significant impact on health care workers as priority targets for education and training.
2. Support the development and delivery of education and training models that increase the use and uptake of information technology among health care workers.
3. Support the evaluation and accreditation of clinical software and disseminate the information to health care workers.

PROGRESS TO DATE

There is a range of current activities in this area. For example:

- training and support activities for general practitioners in information management and information technology have been provided through Divisions of General Practice with funding from the Commonwealth Department of Health and Aged Care. The funding allows Divisions to support the provision of services to general practitioners, including training, brokering hardware and software between general practitioners and commercial providers, and promoting appropriate information technology system usage to general practitioners. Funding for Divisions of General Practice has recently been extended until the end of 2001 and will be directed towards information management activities that improve patient care;
- the Office for Aboriginal and Torres Strait Islander Health supports Aboriginal Health Workers who wish to enhance their skills in the use of information technology. As part of the Patient Information Recall System project (see also section 3.3.1), community controlled health service staff have access to on-site training provided by the system software suppliers. Advanced training in system deployment, organisational change and information management is also available to senior staff through a five-day course auspiced by James Cook University. The Office is also seeking opportunities for new staff to receive training in basic computer skills within the Vocational Employment and Training (VET) sector;
- many industry-specific organisations are also moving quickly to coordinate information technology support and education for providers at a local level;
- health libraries are training and supporting health care workers and consumers to encourage uptake and use of information technology; and
- NSW Health collaborates with the health education sector in the development of informatics courses to ensure that post-graduate students are adequately prepared to enter the workforce as health professionals. A

number of NSW universities provide mandatory computer courses for their undergraduate and postgraduate students to prepare them for hospital practice.

PROPOSED ACTIONS

1. Disseminate the results of the evaluation of accreditation of clinical software.
2. Encourage the development of online and help desk support facilities that are accessible to health care workers.
3. Provide information and other support to general practitioners to enhance information management use in identified priority health areas.
4. Progress further action in line with the recommendations of the General Practice Coding Jury.

TIMETABLE

1. Information from the evaluation of accreditation of clinical software made available to practitioners — during the next GPCG funding period.
2. Implement information management strategies to enhance care in identified health areas — over the next GPCG funding period.
3. Undertake and report on consultations with key stakeholders regarding the important factors to consider in finding the most acceptable and appropriate supporting infrastructure and methodology to achieve an Australian general practice terminology — by end of 2001.

RESPONSIBILITY

Commonwealth Department of Health and Aged Care in collaboration with the GPCG, the medical software industry and relevant clinical colleges.

3.4.2 Future work

CONSUMER TRAINING NEEDS

Information and communication technologies, particularly the Internet, enable consumers to access health information electronically. However, strategies are required to ensure that consumers have the skills to use this information effectively.

LOCALLY ACCESSIBLE TRAINING

Better provision of locally accessible information and training is required for health care workers in regional and remote Australia, especially those in Aboriginal and Torres Strait Islander health services.

EDUCATION STRATEGIES ACROSS THE HEALTH SECTOR

With the increasing exchange of information electronically across the care continuum, a clear strategy will be required for training and educating all practitioners involved in the electronic exchange of clinical information or in contributing to electronic records. An initial project could be to develop a skills program for information workers. A longer-term strategy should include universities, professional colleges and clinical educators as key stakeholders in training health care professionals.

STANDARDS FOR HEALTH INFORMATICS COURSES

High quality courses in health informatics are needed to provide a pool of skilled people who can both educate health care providers and support the development and implementation of health related software and systems. Criteria to guide educational institutions on appropriate standards for health informatics training in Australia would provide a measure of quality that is currently lacking. This in turn would reassure employers that they would be employing people with the requisite skills. It could also lead to the creation of a professional body to oversee continuing professional development.

INFORMATICS CENTRE OF EXCELLENCE

One possible strategy for providing a focus for future training and education programs would be to establish a centre for excellence for informatics, possibly attached to a major university (see also section 3.5).

3.5 Foster research, development and best practice in the use and implementation of online technologies in the health sector

CONTEXT

A great deal of research and development is underway in the areas of health information and communications technologies across the public and the private sectors. Given the complexities of the issues involved, research and

development activities are crucial to test and prove new ideas. However, as yet there are no mechanisms to identify and prioritise key areas for a national collaborative approach to research and development. Moreover, the insights and findings gained through the multitude of projects that have been or are being carried out are poorly disseminated generally, resulting in unnecessary duplication of effort and resources, and impeding the flow of best practice ideas across the sector.

To date, most pilot projects have been undertaken to determine how specific technologies can best be used. Very little work has been undertaken to evaluate the costs and benefits of deploying information and communications technologies in the health sector.²²

The international arena also affords the opportunity to learn from research and development activities in countries with a similar interest to Australia.

OBJECTIVES

1. Identify key areas of major national relevance and priority for future research and development.
2. Increase the dissemination and uptake of research findings and best practice in the use of information management and information technology in the health sector.

PROGRESS TO DATE

Among the many projects being undertaken to develop and test the use of information and communications technologies, key projects to date that have been undertaken on a national basis include the following.

1. The Information Technology Integration component of the Enhanced Primary Care Package (EPCP). The project was funded in the 1999–2000 Federal Budget. It seeks to establish a shared understanding of the issues facing health consumers, service providers and the information technology industry, then support initiatives for the wider adoption of improved data communications. Using a research and development approach, the project is seeking solutions that will identify and deliver 'consumer-centric' solutions to the communication of health care information. Its aim is to promote a more integrated approach to service delivery among health professionals and other service providers, through the improved use of information

²² House of Representatives Standing Committee on Family and Community Affairs 1997, *Health on Line: a report on health information management and telemedicine*, AGPS, Canberra.

technology infrastructure. Importantly, the EPCP encourages a greater role for consumers in making decisions about their health. Consequently, the central assumptions upon which the Information Technology Integration project is based are that:

- the effective coordination of care for individuals across services and locations will rely on the timely communication of confidential patient information between health care providers; and
 - increasingly, electronic data exchange and Internet technologies will play an important role in enhancing these communications to achieve better care.
2. The PeCC Project (Project Electronic Commerce and Communication) (see section 6.1.1).
 3. Telehealth projects in all States and Territories. The ANZ Telehealth Committee also released *A Methodology for Telehealth Evaluation in Australia* in May 2000, which provides a methodology for evaluating the costs and benefits of key telehealth applications in Australia (see section 5.2.1)
 4. The General Practice Computing Group (GPCG) Clearinghouse has been established to provide a single, on-line, authoritative 'foyer' or entry point into general practice and computing. A key function of the Clearinghouse is to establish collaborative networks among stakeholders and to encourage the sharing of information between disparate groups. Designed to be a credible source of information, the Clearinghouse is an internet-based method of centralising the collection, storage and dissemination of information and materials in this area. It also identifies gaps in information, develops linkages, and facilitates the process of turning information into knowledge.
 5. In collaboration with key stakeholders, the Collaborative Health Informatics Centre (CHIC) has developed a national project clearinghouse (called the Australian Information Project Network (APIN)) through to proof-of-concept stage.
 6. The development by CHIC of initiatives to facilitate information exchange nationally, including:
 - a health information technology web site (www.chic.org.au) providing a comprehensive online resource to the health care provider and health information technology sectors domestically and internationally;
 - organisation of Australian and international best practice study tours to see examples of current and innovative information technology implementations in a variety of health care environments;

- organisation of workshops and seminars including speakers from Australian and international health information technology projects to educate and facilitate discussion about health information technology projects and implementations;
 - publication of best practice case studies of current Australian health information technology implementations (www.chic.org.au) to encourage the exchange of information about successful health information technology implementations in Australia; and
 - publication of a fortnightly health information technology e-newsletter that summarises key events, activities and initiatives in the health information technology sector in Australia and overseas.
7. The HIC has developed and is trialing a range of web-based health information reports targeted at Divisions of General Practice. The reports allow users to generate interactive reports online, enabling access to Medicare, the Pharmaceutical Benefits Schedule, the Practice Incentives Program, and diabetes information aggregated to the Division of General Practice of their choice. The model will now be extended to other HIC stakeholder groups in the health sector.

PROPOSED ACTIONS

Develop a national approach

1. Investigate the potential to progress a coordination role for research and development activities through NHIMAC. The aim would be to establish processes for information exchange, prioritisation of key areas of research, and development of Commonwealth, State, Territory and key stakeholder collaboration.
2. Investigate the need for a national clearinghouse for pilot projects and as a mechanism for facilitating information exchange, networking, and developing a framework linking the various health sectors in a systematic way, including the review and assessment of the APIN proof-of-concept phase.
3. Investigate the possibility of a health informatics centre of excellence (see also section 3.4.2).
4. Investigate the possibility of creating an international health information network building on contacts already made by the Commonwealth Department of Health and Aged Care with Health Canada, the Computer Patient Record Group in the USA, and contacts in New Zealand, the United Kingdom and Singapore.

Specific projects

5. *HealthConnect*

Undertake two years of research and development to test the *HealthConnect* concept and facilitate the implementation of national infrastructure, including the national health privacy framework and standards. In the first place, initiate exploratory projects that focus on testing key elements and developing basic infrastructure for *HealthConnect* (see also section 5.1.1).

6. *Better Medication Management System*

Implement the Better Medication Management System (BMMS). The BMMS will make it possible to create an electronic patient medication record by linking prescriptions written by different doctors and dispensed by different pharmacists (see also section 5.1.2).

7. *Information Technology Integration component of the Enhanced Primary Care Package*

Enhanced primary care research and development projects will commence in 2001–02. They include:

- the implementation of open standards in pathology messaging to enable greater functionality in clinical software, more efficient reporting mechanisms, increased patient safety, and an accelerated uptake of messaging standards in general practice;
- the development and demonstration of effective mechanisms through which a health care consumer can record conditions under which their information may be transmitted from one person to another;
- the demonstration of a range of electronic patient-related communications between acute, community, and primary care providers using Internet technologies; and
- the demonstration of a variety of IM/IT strategies in the delivery of coordinated care, through the provision of information technology infrastructure to the second generation of Australian Coordinated Care Trials, also an element of the Enhanced Primary Care Package.

TIMETABLE

1. Investigation of the potential to progress a coordinated role for research and development activities through NHIMAC — June 2002.
2. Investigation of a project clearing house — by the end of 2001.
3. Investigation of informatics centre — by the end of 2001.

4. Investigation of the potential for an international health information network — by mid-2002.
5. *HealthConnect* exploratory projects — to be implemented by mid-2002.
6. Limited field tests for the BMMS to be implemented in early 2002 and, subject to the outcomes of those tests, a national rollout to commence in 2002.
7. Information Technology Integration component of the Enhanced Primary Care Package project reports — by June 2002.

RESPONSIBILITY

Commonwealth Department of Health and Aged Care in conjunction with States and Territories to implement the Information Technology Integration component of the Enhanced Primary Care Package, including the second generation of coordinated care trials. The *HealthConnect* Project Office based in the Commonwealth Department of Health and Aged Care to initiate and coordinate activities relating to *HealthConnect* and the investigation of an international health information network. Commonwealth Department of Health and Aged Care and the HIC to implement the BMMS. Commonwealth, States and Territories to consider the need for a national clearinghouse for health informatics projects. CHIC responsible for work in relation to APIN. Commonwealth Department of Health and Aged Care to investigate the possibility of an informatics centre for health.

PART FOUR — EMPOWERING CONSUMERS AND COMMUNITIES FOR BETTER HEALTH

... as we move to an electronic record, all sorts of things are possible. The record can not only help us to coordinate our care, but it can potentially make all sorts of information about us available for research purposes, which in turn provides better evidence about treatments and about services.

Ms Kate Moore²³
Consumer representative on NHIMAC

E-health has the ability to provide an incredible amount of information about the health system to consumers ... E-health ... offers a quicker, more cost effective way of providing it to a range of users, including consumers. That's empowering.

Mr Matthew Blackmore, Executive Director,
Consumers Health Forum of Australia²⁴

This section of *Health Online* discusses some of the initiatives being undertaken in the area of improving consumer access to health information, particularly through the use of information and communications technologies. They are intended to build on the existing network of non-government support services. While the issue of individuals' access to their own personal health information is clearly important in empowering consumers, this aspect is discussed in detail in Part 5 — Supporting Clinical Care.

²³ Proceedings from the National *Health Online* Summit

²⁴ op. cit.

4.1 Develop a national approach to improving consumer access to health information

CONTEXT

Consumers' access to information and the ability to make decisions about their own health and wellbeing are important rights. The provision of good information will enhance consumers' capacity to make informed decisions about their health and encourage more constructive interactions with health care providers. Greater consumer engagement in health care can also improve clinical outcomes.

In 1996, the Taskforce on Quality in Australian Health Care noted that while a vast amount of health information of varying quality is now produced for consumers, many people feel under-informed about their own health care. According to the Taskforce: 'They are not given the right information in the right way at the right time. This contributes to dissatisfaction with care. It may also contribute to adverse events.' It goes on to say: 'At present, access to health information is clearly inequitable. It depends on the ability and willingness of individual health care providers to give information and on the resources available to consumers and their ability to access these resources.'²⁵

Consumers have a wide variety of information needs, including:

- information on public health issues to promote health and wellbeing and prevent illness;
- information on availability, access, quality, cost of services, rights, complaints mechanisms and access to consumer support groups for individuals and carers, including information to enable consumers to participate in health service planning, policy development and setting priorities and addressing quality issues in the delivery of health services;
- information about medicines (and their potential side effects), conditions and treatment options, benefits, risks and alternatives, including information about prevention and maintenance of wellbeing; and
- information to enable people to live with long-term illness, pain and disability and to access sources of support, self-management of illness and associated pain and disability.

²⁵

Taskforce on Quality in Australian Health Care 1996, *The final report of the Taskforce on Quality in Australian Health Care*, Commonwealth of Australia, Canberra, p40.

Service providers use a range of approaches and interventions to meet the needs of consumers. Similarly, consumers need a range of information in various formats to make informed decisions and actively participate in their health care. Increasingly, consumer health information is being provided in a variety of ways including:

- paper-based approaches such as pamphlets, journals, reference material;
- audio and video presentations;
- call centres providing practical information by phone to consumers who are unable to access information in person;
- personal advice from clinical or non-clinical staff; and
- electronic information via the Internet or other electronic media, for example, medication and health information available through information kiosks at many pharmacies, and other health resources available on CD-ROM (eg Monthly Index Medical Specialities — MIMS).

Consumers also rely heavily on information available through the popular press and through friends and family. While some of this information is useful, it is of variable quality.

Consumer health information must also be relevant to the intended audience. The literacy level and cultural background of target groups, as well as the impact of disabilities such as vision or hearing impairments, should be taken into account when preparing materials. With the advent of electronic media it is also important to recognise that many older people, for example, may not be comfortable in accessing information in this way. Thus information for this audience must also be provided in more traditional ways.

Nevertheless, emerging information and communications technologies — particularly the Internet — have provided valuable tools for addressing some of the current barriers to providing information for health consumers. The Commonwealth's Health*Insite* and pilot Age*Insite* Internet projects, as well as South Australia's HealthySA and Victoria's Better Health Channel (see Appendix 2), have provided authoritative sources of health information online for the benefit of consumers.

An example from the UK is NHS Direct Online, which not only provides a gateway to quality health information on the Internet, but also is supported by NHS Direct, a nurse-led help line. This 24-hour telephone service allows consumers to speak to a nurse who can provide them with health care information and advice. Similar work is being undertaken in some States and Territories. The ACT Government has, for example, recently launched the Health First consumer access centre. This resource provides a single point of contact for health-related information for ACT and regional health care

consumers. The core of this service will be nurse-based triage and referral using voice and Internet-based technologies. A health advisory service for public health notices, service provider directory and best practice advice will also be provided in the future.

OBJECTIVES

1. To facilitate the provision of health information to consumers in appropriate forms.
2. To understand the benefits to consumers and providers of a more informed consumer and the resulting implications to the decision-making process and the health system as a whole.
3. To educate consumers as to where they can seek health information.

PROGRESS TO DATE

In response to recommendations made in the final report of the Taskforce on Quality in Australian Health Care in 1996, the Commonwealth has established the Consumer Focus Collaboration to promote consumer participation in the health care system. The Collaboration includes representatives of Commonwealth, State and Territory governments, consumers, health complaints bodies, and health care, medical, nursing, midwife and hospital pharmacist organisations. One of the key goals of the Collaboration is to facilitate the provision of health information to consumers in appropriate formats. Since its establishment, the Collaboration has released several publications on increasing consumer participation in health care. These include *Improving health services through consumer participation: A resource guide* and *Education and training for consumer participation in health care: A resource guide*.

The National Health and Medical Research Council (NHMRC) has published the guide *How to present the evidence for consumers: Preparation of consumer publications (1999)* for working parties and organisations to use in preparing clinical practice guidelines. The intention is to assist people who are preparing and producing information for consumers of health services.

To inform and consult health consumers about the latest developments in e-health, the Consumers Health Forum of Australia (CHF) was engaged by the Commonwealth Department of Health and Aged Care and the Health Insurance Commission (HIC) to conduct a series of consumer forums around Australia in October–November 2000. Entitled 'Consumers and E-health', the forums canvassed four main topics: the Better Medication Management System (BMMS), HealthConnect, Computers in General Practice and improving consumer access to HIC-administered health information. Participants indicated broad support for the concept of electronic health records. They were readily

able to identify the many likely benefits of such a system, including the potential for a single continuing health record that would reduce the need to remember details of all interactions with the health system. Further information on the Consumers and E-health project can be obtained from the CHF web site at www.chf.org.au.

PROPOSED ACTIONS

1. Consultation with consumer organisations on key health information issues, particularly in relation to the review of progress in implementing *Health Online* (see also section 2.1) and in implementing *HealthConnect* (see also section 5.1.1).
2. Develop a communications strategy to inform individuals about *HealthConnect*, both nationally and at a local/regional level where *HealthConnect* trials will be established. The communications strategy will be developed following the conduct of focus group discussions and in-depth interviews with consumers and health care providers.

TIMETABLE

1. Ongoing.
2. Communications strategy to be completed by August 2001.

RESPONSIBILITY

Department of Health and Aged Care.

4.1.1 Establish the Health/Insite website

CONTEXT

Health/Insite addresses two major deficiencies associated with the increasing tendency of Australian health consumers to source information from the Internet: finding relevant material, and quality assurance. *Health/Insite* addresses these deficiencies by providing an easy-to-navigate central entry point that links only to quality-assessed health web pages provided by information partners. Forty-six organisations that are currently publishing quality web-based health information for consumers have become information partners with the Commonwealth Department of Health and Aged Care by linking their sites to *Health/Insite*.

The Commonwealth Government allocated funding for the development and maintenance of *Health/Insite* as part of its 1998–99 Budget. The funding

recognised the growing number of Australians accessing the Internet in search of credible information on a wide range of health related topics.

Health/*nsite* enables users to search for material linked to the services through a number of information 'paths', including life events, conditions/diseases, lifestyle issues, expert views about specific topics, and general search of all information linked to the facility.

OBJECTIVES

1. To implement an infrastructure that is capable of delivering quality and authoritative information and services to consumers and the health sector.
2. To implement a comprehensive Internet presence that supports the business objectives of the health sector and improves the ability of the stakeholders to deliver services to consumers.
3. To promote two-way communication among consumers and the stakeholders.
4. To establish collaborative partnerships with stakeholders within the health sector.
5. To provide a consumer-focused facility through which the health sector can deliver health information and services.

PROGRESS TO DATE

Health/*nsite* was released as a public pilot on 10 December 1999. It provides access to six health topic areas: cancer, diabetes, heart, stroke and vascular health, child health, food and nutrition, and kidney and urinary tract diseases. The pilot site was released to gain user feedback and to inform the further development of the site, in advance of its full public release on 28 April 2000.

At the time of the launch, the site contained links to over 3200 information resources, arranged into approximately 20 topics, including all of the National Health Priority Areas. An essential feature of the site is its guarantee of the reliability of the information accessed on and through it.

By April 2001, Health/*nsite* included links to over 4800 resources on 46 information partners' web sites, and is visited by over 1000 users each day. There are now 50 major topics, many of which also include significant sub-topic pages, providing links directly to relevant pages on information partners' sites. To date the Health/*nsite* project has focused on the three priorities of consumers, partnerships and infrastructure.

PROPOSED ACTIONS

1. A strategic planning discussion paper to cover the development of Health*Insite* for the next five years is about to be released for discussion by stakeholders.
2. Feedback from users continues to be monitored and has been used to guide development of new topic areas and technical facilities for the site and to develop the strategic planning discussion paper.
3. Potential new information partners are being assessed as to whether to include access to their resources through the site.
4. Upgraded search facilities for the site are soon to be introduced.
5. Upgraded personalisation features for the site are soon to be introduced.

TIMETABLE

1. Strategic planning discussion paper for 2001–2006 circulated — 1 July 2001.
2. Strategic Plan 2001–2006 developed — 30 December 2001.

RESPONSIBILITY

Commonwealth Department of Health and Aged Care.

4.1.2 Develop the ‘Your Health’ area of the HIC website

CONTEXT

The HIC is a statutory authority responsible for administering a range of Commonwealth Government health programs, including Medicare and the Pharmaceutical Benefits Scheme. To augment this role and as part of its strategic aim to contribute to empowering health care consumers, the HIC is developing a range of approaches to improve consumer access to information and services. A key focus is on the enhanced use of the Internet and the Medicare Branch Office network.

OBJECTIVES

1. To enable health consumers to engage with the HIC online.
2. To provide health consumers with a customised, targeted online gateway to HIC information and services.

3. To utilise the existing HIC Branch Office network to improve access to HIC information for consumers.

PROGRESS TO DATE

- Establishment of the Consumer Advisory Committee (CAC) to help inform the HIC's development of information products and services and delivery mechanisms for consumers.
- In collaboration with the CAC, the HIC commissioned a consultancy titled *A Systematic Review of the Information Needs of Consumers*. The major conclusion of the consultancy is that there are major unmet information needs for consumers, and the HIC can play a role in meeting those needs. The consultancy report supported the potential role of the Internet in delivering information products and services to consumers, but recommended that the HIC should also investigate alternative delivery mechanisms given that many consumers most in need of quality information do not have access to the Internet.

The consultancy report outlined a range of potential information products that the HIC could develop. These include:

- improved consumer access to information about health care providers;
 - improved notification of MBS and PBS safety net entitlements to consumers by the HIC;
 - establishment of consumer-friendly disease management products, such as disease registers and other feedback and health tracking mechanisms; and
 - improved summary information to consumers on health program usage, such as summary information on MBS and PBS usage (including better information about particular items).
- Development and release of the 'Your Health' area of the HIC web site. The web site includes a new facility to lodge a request for a financial statement (for tax purposes) online. Requests are processed online, and statements sent to consumers via existing postal arrangements.
 - Advanced planning for the implementation of a limited State-based trial of specific information services available through Medicare offices.

PROPOSED ACTIONS

1. Develop a suite of online information products and services to be delivered through the HIC web channel.
2. Deliver an enhanced range of information services through Medicare branch offices.

3. Conduct research into the access and equity issues related to access to and delivery of HIC information services.

TIMETABLE

Online availability of personal information and services and ability for consumers to transact with the HIC online — second half of 2002 pending implementation of appropriate privacy and security arrangements.

RESPONSIBILITY

HIC

4.1.3 Develop and maintain a specific rural health website

CONTEXT

The main concerns regarding access to information by consumers in rural communities relate to inequality in terms of the availability, cost and quality of rural Internet services.

OBJECTIVES

1. To provide current and accurate information on rural health issues, policies and services for consumers, service providers, researchers, policy developers and health professionals.
2. To develop a website that is easily accessible to rural communities and meets the Commonwealth Government's online accessibility requirements.
3. To develop a website that deals specifically with rural health and ensures that the information is targeted, relevant and interesting.

PROGRESS TO DATE

The rural health website at <http://www.ruralhealth.gov.au> was launched in October 2000. The website is being redesigned to become a more intuitive site that meets the needs of rural consumers, health professionals and service providers.

PROPOSED ACTIONS

1. Evaluate and respond to consumer feedback.

2. Continually improve the site to enhance and increase access for rural communities.
3. Develop online forms, provide alternatives to long documents and more interactive services online that meet the needs of rural constituents.
4. Further develop an online mapping functionality showing accessibility of health services using Geographic Information System (GIS) software and applications.

TIMETABLE

1. Redesign of the web site — by July 2001.
2. Consumer focus testing — March 2002.

RESPONSIBILITY

The Office of Rural Health, Commonwealth Department of Health and Aged Care.

4.2 Future work

4.2.1 Consumer access to online services

The increasing emphasis on service delivery via the Internet means that access by consumers (particularly in remote areas) to Internet services is becoming an important issue — not just in the health sector but also across government services. The States and Territories are at various stages of developing strategies to address the access issue, including the use of consumer health kiosks, use of access points in libraries, and other public access mechanisms (see Appendix 2).

4.2.2 Accreditation of consumer information

The importance of accurate, reliable health information for consumers is well recognised. The NHMRC guidelines (section 4.1) and *Health/Insite* projects are each designed to support the development of such material. A clear accreditation process for consumer material would be invaluable for health information providers.

PART FIVE — SUPPORTING CLINICAL CARE

... it is critical that ... information is provided at the point of care, at the time of care, irrespective of the care provider, care setting or time or care delivery. Technology now provides tools to support this. HealthConnect has provided a strong trigger for health organisations to achieve this outside the boundary of the hospital and across the full life history.

Mr Michael Reid, Director General, NSW Health²⁶

The acceptance of e-health on a large scale by clinicians will depend very much on the ability of the new technology to not only improve clinical outcomes, but to do so in a way that is sensitive to the time critical requirements of the patient consultation.

Dr George Cerchez
Member of NHIMAC²⁷

This section addresses the use of information and communications technologies to support clinical care through:

- better management of clinical information to support care;
- increased availability of online health services to provide direct clinical care; and
- increased use of online applications to support efficient clinical practice.

5.1 Better management of clinical information to support care

Progressive 're-engineering' of health care delivery over the past decade has resulted in a blurring of traditional boundaries, both physical and professional.

²⁶ Proceedings from the National *Health Online* Summit

²⁷ op. cit.

With shorter hospital stays and substitution of care settings, care is increasingly moving out of hospitals and into the community and the home. Greater emphasis on coordination of care has led to increased involvement of multi-disciplinary teams and the development of partnership models, breaking down more traditional approaches to patient care. The boundaries between the health and community sectors are also blurring. These changes have brought with them increasing recognition of the need for effective communication and sharing of clinical information both with providers and consumers to optimise individual care — and the limitations of the current paper-based system in this context.

Better information flow for clinical care is about bringing information to the provider and the consumer at the point of care to enhance the quality of clinical decision-making. Information and communications technologies can now provide the tools whereby essential clinical information can be rapidly transferred both within and across care boundaries to support the overarching objective of truly seamless care.

While much has been documented about the problems in exchanging information in the current paper-based environment, it needs to be acknowledged that information technologies are not in themselves solutions but enablers — technical approaches alone will not achieve better information management. The organisational and cultural aspects of how information is currently exchanged, the barriers to exchange and the clinical information needs of both consumers and providers at the point of care must be addressed before such technologies can be effectively used to improve the management of clinical information as articulated in Part One.

As these issues are addressed, the health care system in the future is likely to be underpinned by increasingly sophisticated clinical and administrative information systems that enable a whole range of clinical information to be available online at the point of care. For example, clinicians in hospitals will be able to access a patient's medical record online at clinical workstations located throughout the hospital, record notes, order tests and treatments, receive results, refer the patient to other clinicians or services, and review the progress notes of nurses, allied professionals and other clinicians. Built in to these clinical workstations will be a variety of decision-support tools — such as alerts and prompts and online access to up-to-date clinical advice, including clinical practice guidelines and other health knowledge bases. Such systems will also have the capacity to provide patients with health information tailored to their needs (electronically and in hard copy).

Clearly, information needs will vary according to the nature of the service being provided, the needs of the provider and those of the consumer. For example, the content and amount of information needed to treat a patient in an intensive

care setting is substantially different from that needed by a general practitioner reviewing the same patient after discharge.

As the electronic exchange of information becomes commonplace across the health care system, boundaries will blur even further. Ultimately, consumers and their health care providers (with the consent of the consumer concerned) will be able to access personal health information 24 hours a day at the point of care, regardless of location, through the development of a national approach to electronic health records.

The benefits will not be limited to providers and consumers at the point of care. The enhanced capacity to collect quality clinical data will confer great benefits to the wider community through better information management for quality improvement purposes, research, service planning and delivery, and public health management. For example, more efficient and effective collections on treatments and outcomes will enable clinicians to review their own practice patterns more easily and to compare them with those of their peers.

Implementing such information systems will require a complete rethink of the way in which information is currently communicated. Compatibility of operating systems is a major component. In addition, much ground work needs to be done to determine the core clinical information needs of both providers and consumers along the care continuum, how to convert these into a clinically useful form, and how to resolve issues of liability, privacy and intellectual property.

The inherent mix of public and private services in the Australian health system poses its own challenges. Moving the health sector progressively online will create a shift in the way providers operate. This will require significant cultural change across the health and community sectors. The outlays required on information and communication technologies, especially within a rapidly changing environment, mean that the benefits to private practitioners in terms of time saved and more effective clinical practice will need to be clearly demonstrated before such systems will be adopted widely in the private sector. Major issues to be managed along the way include the crossing of professional boundaries, the need to acquire new skills, the changing face of the workplace and changing consumer expectations and knowledge levels.

5.1.1 **Develop a national framework for the use of electronic health records for service delivery purposes**

CONTEXT

Currently, the majority of health care records exist as discrete paper-based entities held at a variety of different locations, resulting in a fragmented picture of the individual's health needs and history. Records are scattered between traditional and non-traditional health care sectors, and related community support services. The quality of information they contain varies enormously and problems often arise concerning legibility and issues around availability, accuracy, appropriateness of content, and loss of information.

Access to necessary information at the time care is delivered is central to good clinical decision-making — practitioners and consumers need the right information at the right time. The greater focus of health care policy on providing 'seamless care', particularly for the frail aged, the chronically ill, and those with other complex care needs, has highlighted the need to improve information exchange between different types of services and providers. The increasing shift of health care service delivery out of hospitals and into the community has led to a wider range of services being utilised, often resulting in duplication of time and effort through the repetition of assessments, testing and history-taking.

Increasingly, the potential benefits of electronic health records in improving efficiency, safety and quality of care over paper-based systems are being recognised across the health sector. In 1996, the Taskforce on Quality in Australian Health Care advocated the use of a patient-centred, computerised, clinical information system with links between different health care providers as the only practical way of ensuring that relevant health information is made available to practitioners.²⁸

Electronic health records and transmission can provide powerful tools to link the isolated islands and fragments of information that currently exist between services, thereby allowing practitioners almost instant access to a comprehensive picture of an individual's health history and current status. The potential benefits to health consumers and providers are substantial, including:

- Reduced numbers of adverse events caused by lack of information about the individual consumer at the point of care.
- Reduced duplication of diagnostic tests due to unavailability of previous test results.

²⁸ Taskforce on Quality in Australian Health Care 1996, p40.

- Enhanced decision-making for providers and consumers (and therefore increased quality of care and health outcomes) through online access to decision-support tools such as clinical practice guidelines, prescribing alerts and recent information on diagnoses, treatment and prevention.
- Greater coordination and integration of care across the care continuum through increased exchange of information between service providers in the health and community sectors.
- Individual consumers being confident that, subject to appropriate privacy protection and their consent, regardless of where they seek or need health care, the health care professional treating them has full access to relevant clinical histories and treatment information. This will mean that consumers will not have to go over the same questions and assessments each time they see a different provider.
- Efficiency gains through time saved in retrieving information and reduced duplication in ordering tests. Ordering tests and treatments and arranging appointments and referrals can be substantially accelerated with direct electronic requests. Data will be collected and made available more quickly, thereby increasing the time available for direct patient care.

The National Health Service (NHS) in Britain has embraced the concept of electronic records for service delivery and has now commenced the development of a national system of lifelong electronic health records.²⁹ Canada is moving in a similar direction³⁰ and New Zealand has taken significant strides in building a national health information infrastructure.³¹

Consistency of approach is an underlying imperative in the effective use of electronic health records, across Commonwealth, State and Territory jurisdictions and in different forms of care in both the public and private sectors, including acute and community care settings. People are very mobile and receive assistance in a variety of settings and from different health care providers. The approach to electronic health records must be similarly capable of operating across all care settings.

²⁹ National Health Service (NHS) Executive 1998, *Information for health: an information strategy for the modern NHS 1998–2005*, HMSO, London.

³⁰ Canadian Institute for Health Information 1999, *Roadmap Initiative: launching the process*, CIHI, Ontario, Canada (available at http://www.cihi.ca/Roadmap/Launch_process.shtml)
Canadian Institute for Health Information 2001, *Roadmap Initiative: launching the process: 2 years later*, CIHI, Ontario, Canada (available at www.cihi.ca/Roadmap/PDF/ProgReport2001.pdf)

³¹ New Zealand Health Information Service 1996, *Electronic Health Records*, 2nd edn, NZHIS, Wellington, New Zealand (available at www.nzhis.govt.nz/publications/EMR.html)

OBJECTIVE

To develop and implement a national approach to electronic health records.

PROGRESS TO DATE

National Electronic Health Records Taskforce

As recommended in the first edition of *Health Online*, the National Health Information Management Advisory Council (NHIMAC) commissioned the National Electronic Health Records Taskforce in November 1999. The role of the Taskforce was to evaluate the benefits and difficulties of adopting a national approach to electronic health records in Australia and to propose a costing plan to Health Ministers for the introduction of such a system (including the building blocks necessary for it to be viable).

The Taskforce undertook an extensive investigation that involved the commissioning of several reports, a wide-ranging public consultation process, and the preparation of a number of background papers. Following its consideration of this body of work, the Taskforce presented a report to the Australian Health Ministers' Conference in July 2000.

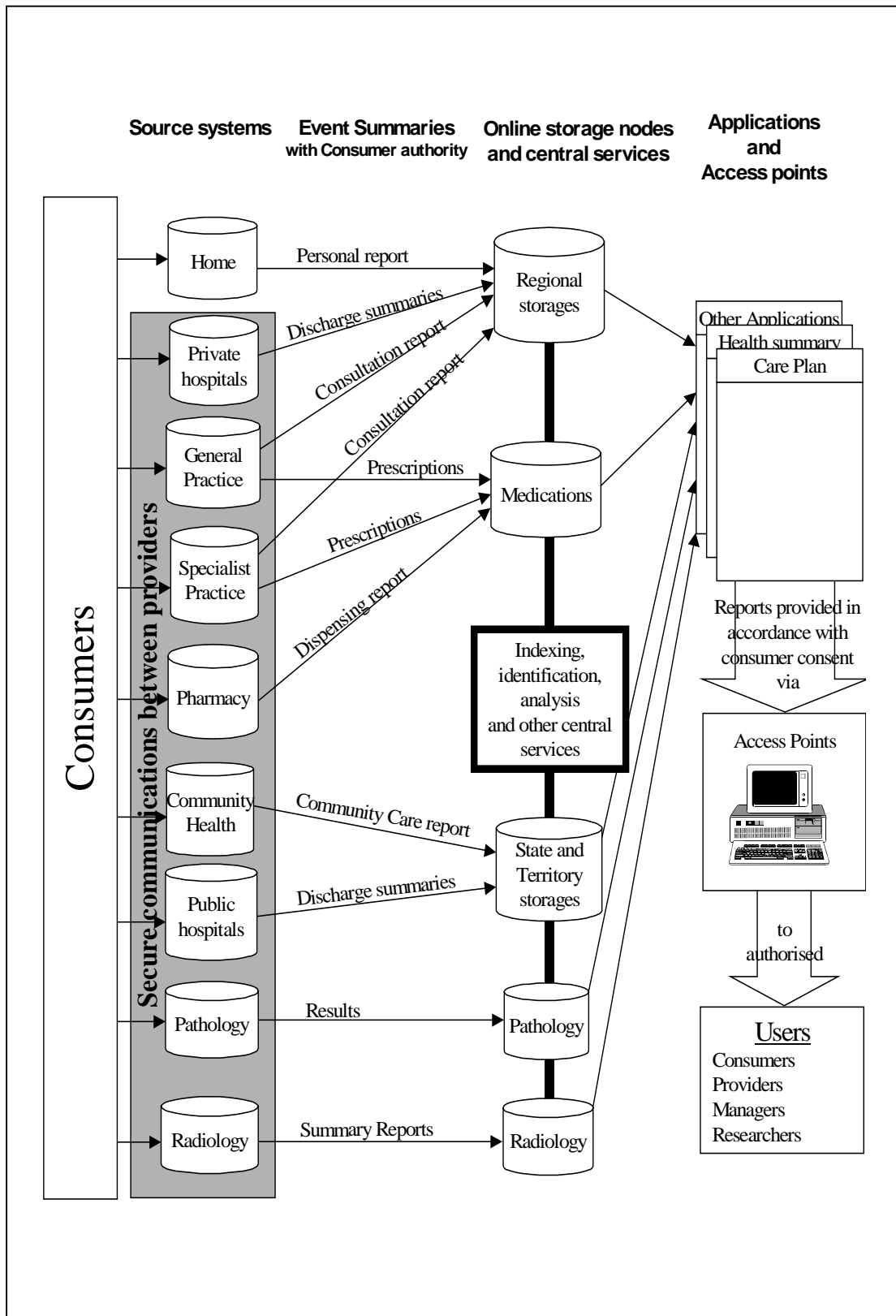
In its final report, the Taskforce made 22 recommendations altogether, including the need for a national approach, the network itself, necessary building blocks, governance, and the need for a staged implementation. The central recommendation was to develop a national health information network (*HealthConnect*) that would allow information held in electronic records to be collected, safely stored and exchanged — with the permission of the individual health consumer.

Under *HealthConnect*, health-related information about an individual would be collected in a standard, electronic format at the point of care (such as at a hospital or a general practitioner's clinic). This information would take the form of health summaries — not all the notes that a health care provider may choose to keep about a consultation. The Taskforce's proposal is portrayed diagrammatically in Figure 5.1.

At the Health Ministers' Conference there was unanimous support for:

- adopting a national approach to electronic health records in Australia;
- the secure networking of health information more generally; and
- jointly establishing *HealthConnect* — A Health Information Network for Australia, subject to budget constraints, as the best way to achieve these aims.

Figure 5.1: Health information Network for Australia



At a subsequent meeting in November 2000, Health Ministers agreed to undertake two years of development work to test the *HealthConnect* concept and also to undertake additional work on developing the necessary infrastructure.

The *HealthConnect* Program Office, overseen by an Interim Board reporting to Australian Health Ministers through the Australian Health Ministers' Advisory Council (AHMAC), has been established to carry out the first two years of research and development. The Program Office is based in the Commonwealth Department of Health and Aged Care and includes State and Territory government representatives.

Infrastructure development

The Taskforce made extensive recommendations about the building blocks necessary to support the operation of the proposed network, as well as to progress the wider health information agenda. The work identified by the Taskforce included:

- privacy, confidentiality and security;
- standards
 - data standards
 - classification and coding standards
 - messaging standards
 - information storage standards
 - telecommunications infrastructure; and
- encouraging uptake and use of information technology.

The Taskforce was particularly concerned about privacy, and made a number of recommendations aimed at ensuring that a robust framework would be created to protect the privacy of personal health information. Such information is extremely sensitive, and consumers need to be confident that their information is valued, that their privacy will be respected, and that such information will only be used to improve both their own health and that of the community as a whole.

Exploratory projects

Following the endorsement of the Taskforce report by Health Ministers, a joint Commonwealth, State and Territory working group initiated the selection of exploratory projects to be undertaken in all States and Territories to test various components of *HealthConnect*.

The projects have been chosen on the basis of their overall contribution to *HealthConnect* and include investigations of specific issues. Of necessity they focus on developing basic infrastructure as they were commissioned before detailed design work had been undertaken. The projects are being undertaken

in collaboration with multiple jurisdictions. This will provide a vehicle for realising national agreement on key issues. The projects are due for completion by mid-2002.

In addition to these projects, the Better Medication Management System (BMMS) (see section 5.1.2) provides an important testing-ground for trialing features that are central to the wider concept of *HealthConnect*.

PROPOSED ACTIONS

Development and implementation of a national approach to electronic health records is a major undertaking. It will require substantial preliminary work in addition to the work that has already been undertaken. This will take time and it is expected that individual components of an overall framework for electronic health records will be developed progressively. The *HealthConnect* Program Office and Interim Board are responsible for seeing that this work proceeds in a coherent way.

The primary work of the Program Office will be to test the *HealthConnect* concept and facilitate the implementation of national infrastructure, including the national privacy framework and standards in collaboration with the National Health Information Standards Advisory Committee (NHISAC). This will be done in a way that is consistent with *Setting the Standards: A National Health Information Standards Plan for Australia* (see also section 3.2.1).

The key deliverables of the Program Office over the next two years will include the development and evaluation of a proof-of-concept trial site or sites that determine:

- the value of a national network;
- the most effective way of implementing a network;
- how to manage privacy and security;
- the best approach to governance; and
- a fully costed and sustainable business case.

The Program Office will also oversee the initial set of exploratory projects selected by the joint Commonwealth, State and Territory working group. These projects cover:

- a national approach to the creation and maintenance of provider directories;
- a national approach to hospital separation summaries;

- a technical model for implementing consent policies in an electronic environment;
- extension of the National Health Data Dictionary to cover the needs of electronic health records;
- examination of telecommunications infrastructure in remote areas;
- exploration of issues involved in the accurate delivery of clinical information;
- development of a national framework for data classification; and
- the use and impact of electronic health information systems in Indigenous communities.

Privacy, confidentiality and security

Personal health information is particularly sensitive. Health Ministers are committed to ensuring that the privacy of personal health information is upheld in an electronic environment.

As it has the potential to be a national network, the rules for *HealthConnect* relating to privacy, confidentiality and security need to be uniform across Australia. Even in the research and development stage of *HealthConnect* over the next two years, a sound framework needs to be put in place. Key privacy elements will ensure that:

- Participation in the network will be on a voluntary and informed basis. Individuals must freely agree to participate in the network in the first place, and on an ongoing basis.
- A person cannot be penalised or discriminated against for not participating in the network.
- Consumers will have access to their own information and be able to control who can see their information.
- Information collected and stored on the network can be used only for agreed purposes and will be restricted to the health sector.
- Stringent security measures will be in place wherever health information is collected, stored or exchanged on the network.
- Consumers will know what information is being collected about them, the purposes for which it will be used, and who has accessed the information.

If *HealthConnect* is developed beyond its two-year research and development phase, then it is expected that additional mechanisms will be established, namely:

- Providers or health services participating in the network will be bound by legislation.

- Penalties will be in place to both deter and punish misuse of information on the network.
- Complaints and redress mechanisms will be in place to allow consumers or providers to take action in the (unlikely) event there were a breach of privacy or a breakdown in security.

The Commonwealth Government is currently working with the States and Territories to develop a National Health Privacy Code to support health information initiatives generally and ensure consistency across the public and private sectors. This is discussed in more detail under section 3.1.1. A national security framework to underpin development work on *HealthConnect* is discussed under section 3.1.2. Providers participating in *HealthConnect* will be bound by the National Health Privacy Code. As indicated above, additional, specific legislation for *HealthConnect* will also be developed before any national roll out of the network in the future.

During the research and development phase, trial participants will be bound by contractual arrangements that reflect the requirements of the proposed code. The lessons learned will inform the development of the legislation needed to enact the code and specific legislation for *HealthConnect*.

State initiatives

State health departments have commenced developing and implementing projects consistent with *HealthConnect*. For example, in March 2000, the NSW Health Council set an objective for the NSW health system to implement a system of electronic health records by 2010 (NSW EHR*Net). The NSW EHR*Net will be a system providing authorised web-enabled access to the personal clinical information held by the NSW public health system. The system will provide substantial clinical information across the continuum of care, in formats appropriate to the needs of various users and will provide an early introduction to the benefits of the electronic health record. The system will be configured to integrate data compiled from the patient administration and other clinical support systems (pathology, radiology etc).

In this context, NSW Health and the Health Insurance Commission (HIC) undertook a chronic disease management study, which describes the components of a chronic disease management system needed to provide relevant information at the point of care. The study identified what information is required by whom and for what purposes at different stages of care planning and how the information can be brought together as and when it is needed. Consideration is being given to including chronic disease management as a particular application of the NSW EHR*Net.

TIMETABLE

1. Completion of initial set of exploratory projects — by mid 2002.
2. Completion and evaluation of proof-of-concept trial sites — by June 2003.

RESPONSIBILITY

HealthConnect Program Office and interim Advisory Board to initiate and coordinate these activities. All stakeholders will be engaged in the process.

5.1.2 Better medication management to support care

CONTEXT

There has been increasing interest in the use of online technologies for pharmaceutical transactions to improve both the efficiency and effectiveness of medication prescribing. Electronic medication management can provide much safer arrangements and achieve better health outcomes for consumers. With the current fragmented approach to medication records, whereby individual providers or pharmacists only have records of their own prescribing and dispensing activity, there is always a possibility of adverse interactions between medications prescribed by different providers. This is because one provider will not be aware of what another has prescribed.

For prescribers and pharmacists, more accurate and up-to-date knowledge of a consumer's medication history and the automatic triggering of drug alerts can result in a much improved and safer prescribing and dispensing environment.

Electronic medication management also means that prescription data only has to be entered once, removing a major potential source of error. In addition, pharmacists will not have to rely on their ability to decipher the prescriber's handwriting.

As well as these clinical aspects, health information and technology advances also provide opportunities for improvements in administration (eg online claiming) and planning. The basic infrastructure for some of these opportunities can be tested as part of the medication management initiatives.

OBJECTIVE

To improve provider and consumer access to medicines information by means of a personal electronic medication record, centralised database and a

communication network, in order to reduce the chance of adverse drug outcomes and hospitalisation.

PROGRESS TO DATE

The Advisory Group on Information Technology in Prescribing and Medication Management was set up by the Minister for Health and Aged Care in November 1999 to advise him on the best ways to use information technology to improve prescribing and medication management. The Group comprised representatives of key medical, pharmacy and consumer organisations, the Commonwealth Department of Health and Aged Care, the Department of Veterans' Affairs and the HIC. The Group's task was to identify the objectives to be targeted in developing an information technology system for improved medication management, set out the broad options and decide what should be progressed first. The product of this work, the Better Medication Management System for Australia (BMMS), is now being developed following an announcement in the 2000–2001 Federal Budget.

The BMMS will create individual electronic medication records, linking prescriptions written for a particular individual by different providers or dispensed by different pharmacists. Initially, consumers will also be able to access a paper copy of their record.

The new system will be voluntary for consumers, providers and pharmacists (ie they will not be part of the system unless they choose to participate). Consumers will have to give their consent before either their provider or pharmacist can look at their medication record. Consumers, providers and pharmacists may also withdraw at any time.

Privacy and confidentiality issues will be addressed through measures that include legislation and comprehensive security protection through the system. An exposure draft of proposed legislation was circulated for information and comment in late May 2001. The Bill includes a privacy regime and independent governance arrangements for the BMMS and works with the existing Commonwealth privacy regime.

In addition, the HIC systems necessary to support the BMMS (including public key infrastructure) have been developed and are being tested. Work is also being undertaken with the pharmacy and medical software industry to refine specifications for desktop systems that will communicate with the HIC-based central record. EAN codes are being established for pharmaceuticals through the work of the Medicines Coding Council of Australia, in cooperation with the pharmaceutical industry.

The BMMS also provides a testing-ground for exploring and observing features which are central to the wider concept of *HealthConnect*. The privacy protections and governance arrangements underpinning BMMS will ultimately merge into the wider initiative as it develops. Lessons learnt through the implementation of BMMS will benefit the comprehensive *HealthConnect* project.

PROPOSED ACTIONS

1. Further activity towards BMMS development and implementation will be accompanied by communication and education activity for consumers, doctors and pharmacists.
2. Initially, the BMMS is being established for medications prescribed and dispensed in the community. Longer-term issues, therefore, include extending the BMMS into hospitals. Future developments may include electronic access to the record by consumers.

TIMETABLE

Limited field tests are planned for early in 2002. Subject to the outcomes of these field tests and the passage of legislation, national rollout is scheduled to commence later in 2002.

RESPONSIBILITY

BMMS Development Group, Commonwealth Department of Health and Aged Care, and the HIC.

5.1.3 Expand development of decision-support services

CONTEXT

Rapid advances in new therapies and interventions, increasing emphasis on evidence-based health care, and greater consumer expectations mean that health care professionals can no longer expect to retain the substantial amount of knowledge required to keep abreast of modern medicine. Information and communication technologies have the potential to enable practitioners (and consumers) to gain rapid access to essential and up-to-date information about individual patients, their conditions and management choices, thereby supporting decision-making for both practitioners and patients. Research in the USA has shown, for example, that medication errors in hospitals can be substantially reduced by installing computerised physician-order entry systems

that display warnings in case of drug interactions.³² One such case has been a 27 per cent reduction in mortality among patients being treated with antibiotics in one Salt Lake City hospital.

Electronic decision-support systems can include:

- Direct electronic access to individual patient records (as discussed in section 5.1.1), which allows clinicians to determine allergies, current medications and conditions, etc.
- Electronic links to medical information, journals and specific 'chat groups'.
- Electronic access to endorsed clinical guidelines and pathways.
- Built-in alerts and prompts to assist in treating, prescribing, and ongoing monitoring. For example, a practitioner prescribing a specific intravenous antibiotic that could adversely affect renal function can be prompted to check the patient's renal function both before and during treatment. Such electronic prompts can also advise of potential interactions between current and new medications, and so on.
- Peer support networks and access to second opinions.

There are two key components of any decision-support system. Firstly, the information has to be created, kept up-to-date and made available in a format that facilitates its electronic delivery. Secondly, the information needs to be delivered when and where it is needed.

At present in Australia there is no agreed model for making independent, authoritative, Australian, clinical content available to clinicians, in either a paper-based or an electronic format. High quality clinical guidelines and other decision-support information are published by a range of organisations, including the Commonwealth, State and Territory health departments, non-government organisations and commercial organisations. Much of this material is made available to health professionals at little or no charge, but some publishers rely on sales revenue for their viability.

Some inherent risks need to be addressed in how the commercial development and funding of decision support might influence medical practitioners. One example is how the pharmaceutical industry might unduly influence general practitioner behaviour by extending the use of advertising to fund general practice software. In this regard, the Australian Pharmaceutical Manufacturers Association has developed a code of conduct on advertising in electronic

³² Pestotnik SL, Classen DC, Evans RS, Burke JP 1996, Implementing antibiotic practice guidelines through computer-assisted decision support: clinical and financial outcomes. *Ann Int Med*, vol. 124, pp.884–90.

prescribing software packages. The National Prescribing Service also has a working party on electronic decision support.

Government and professional groups have a role in ensuring that quality information is maintained and disseminated. Australian health libraries can also contribute by providing access to a wide range of health information resources. The librarians support the clinical, research, education, and management activities of their organisations. Some provide services to health consumers. Others provide clinical decision support with services and collections. Health librarians organise and exploit health information resources (both paper based and electronic) so they can be used in making health care decisions. They also train clinicians in literature searching skills and critical appraisal.

Substantial research is required if the nature of the clinical decision-making process is to be understood, the points at which additional information could usefully support the clinician, the nature of the information that should be provided, and the most useful form of delivery.

However, there is general agreement that clinical decision-support resources will be most useful once they are embedded in the medical software rather than provided as 'add-on' products or separate software packages. Integrating consumer medical information into the clinical software used by practitioners at the point of consultation would create an ideal vehicle for providing health information to consumers. This information would need to be controlled centrally to ensure quality.

In most instances where the information is to be accessed as part of the clinical encounter, electronic decision-support information will be delivered via commercial products and the medical software industry will take the key role in ensuring that the delivery mechanisms meet the needs of their customers. In addition, standards requirements for decision support are being identified as part of a larger review of data requirements for harvesting information from records and feeding it back into the clinical care process.

Internet technology also enables a wider range of information to be available to health professionals in a library format. Many such services already exist or are being developed by government and private providers. Health*Insite* and the NSW Clinical Information Access Program (CIAP) are two examples of such services.

OBJECTIVES

1. Establish a coherent approach to the development of decision-support systems and electronic clinical resources for health professionals.

2. Bring new decision-support services into operation.

PROGRESS TO DATE

There is a range of current activity in this area. For example:

- The National Health and Medical Research Council (NHMRC) is developing and promulgating clinical guidelines, and endorsing guidelines developed by other organisations.
- Work on evidence-based medicine being conducted by the Royal Australasian College of Physicians through its Clinical Support Systems Program (CSSP). The program has developed a model that integrates the methodologies of clinical practice improvement and evidence-based medicine to enable clinicians to embed best practice routinely in clinical care. The college is testing this model in sites across the country.
- The HIC, in collaboration with its Clinical Advisory Groups, has been able to develop dynamic information reports targeted at Divisions of General Practice, practices, general practitioners and consumers. The focus of these reports is on improving disease management by facilitating access to aggregated population data beginning in the area diabetes.
- The Commonwealth Department of Health and Aged Care has initiated preliminary discussions to link the interests of NHIMAC, general practice, the National Institute of Clinical Studies, and the Australian Safety and Quality Council in this area.

PROPOSED ACTIONS

The Commonwealth Department of Health and Aged Care to work with the medical profession, clinical colleges, the hospital sector and health information suppliers to determine priorities for Commonwealth support for knowledge base and decision-support development and in particular, to gain the agreement of key stakeholders to a coordinated approach.

TIMETABLE

Develop a framework and priorities for action — December 2001.

RESPONSIBILITY

Commonwealth Department of Health and Aged Care, General Practice Computing Group, clinical colleges, HIC, National Institute of Clinical Studies, Australian Quality and Safety Council, Australian health libraries. The Commonwealth Attorney-General's Department and the Federal Privacy

Commissioner should be consulted to ensure that any decision-support activities involving personal health information take account of privacy concerns.

5.2 Increased availability of online health services to provide direct clinical care

The use of online technologies for direct provision of health care provides exciting opportunities to increase consumer and provider access to a range of health services, particularly for those living in remote and rural communities. The emergence of Internet-based technologies and distributed systems, together with business integration and improvement, are increasingly driving the merging of telehealth with mainstream health care delivery.

The following section outlines strategies aimed at increasing the availability of services where and when they are needed through the use of communications and information technologies.

5.2.1 Develop strategies to expand the appropriate and cost-effective use of telehealth services

CONTEXT

The term telehealth (or telemedicine) is used to describe a health delivery system that provides health-related activities at a distance between two or more locations using technology-assisted communications. Currently, the main applications for telehealth services in Australia are:

- interactive video (clinical care; health care worker education, training and peer support; and administrative purposes);
- tele-imaging (eg transmission of radiological and ophthalmological images between locations); and
- telepathology (transmission of medical tests between locations).

The further development and expansion of telehealth services in Australia offers benefits including:

- increased access to appropriate health services for both providers and consumers in regional and remote areas;
- reduced time away from work and homes for health consumers living in regional and rural Australia;
- more efficient delivery of health services through reduced delays and costs relating to patient transfers;

- more efficient and effective diagnosis and treatment through rapid access to diagnostic test results and online advice for providers;
- improved communication between health care providers across health care settings;
- improved professional support and decreased professional isolation for rural and remote practitioners;
- potential cost-savings through support for home-based rather than institutional care;
- increased online support, education and training of health care professionals; and
- a valuable vehicle to export Australian health care expertise (see part 7).

Given Australia's geographic size and thinly populated interior and difficulties in providing health services to these areas, telehealth has been demonstrated as a proven model to improve the access and equity of health care. Indeed, Australia is one of the few countries in the world to have made significant advances in some types of telehealth service delivery. Furthermore, applications of telehealth need not be limited to rural and remote settings. Potentially, there are as many applications for telehealth methodologies in urban settings.

OBJECTIVE

To develop strategies to expand the appropriate and cost-effective use of telehealth services.

PROGRESS TO DATE

In 1996, AHMAC endorsed the establishment of the National Telehealth Committee, later known as the Australian New Zealand Telehealth Committee (ANZ Telehealth Committee). The ANZ Telehealth Committee has made substantial progress in considering the many issues related to the rapid expansion, application, evaluation and sustainability of telehealth services across Australia, and more recently, New Zealand. This work includes:

- Drafting a submission on behalf of the Royal Australian and New Zealand College of Psychiatry for telepsychiatry to be listed on the Medicare Benefits Schedule.
- Drafting a guide for stakeholders on the preparation of telehealth submissions for the Medicare Benefits Schedule.

- In conjunction with the Commonwealth Department of Health and Aged Care, managing a consultancy to develop and publish *A Methodology for Telehealth Evaluation in Australia*.
- Drafting a set of national telehealth data definitions that have been submitted to the National Health Data Committee for consideration.
- Publishing on the ANZ Telehealth Committee website a national discussion paper titled *Telehealth and the Law*, which identifies the legal and legislative issues for telehealth.
- Drafting a discussion paper on international legal issues for telehealth in Australia.
- Maintaining the ANZ Telehealth Committee's website (www.telehealth.org.au) and updating website's database of current telehealth projects, programs and services across Australasia.
- Disseminating information and promoting national telehealth issues and activities through conference and seminar presentations. The secretariat and committee have been an information resource for members of the public (including health professionals) and international enquiries.

In May 2000, the ANZ Telehealth Committee (at the request of AHMAC) conducted a national Telehealth Think Tank to provide a basis for a national telehealth plan. It comprised representatives from the health sector, consumers, and business and academic experts in information management technology. The Think Tank considered national strategies and actions required to progress a sustainable platform for excellent telehealth practice in Australia and New Zealand. The key themes to emerge were as follows:

- developing a consumer-centred approach and engaging communities in the further development of telehealth;
- raising awareness and acceptance of telehealth among providers;
- directing research, development, evaluation and dissemination;
- developing sustainable funding models;
- mainstreaming telehealth;
- driving reform through effective leadership.

Following the Think Tank, the ANZ Telehealth Committee was reconstituted under NHIMAC to enhance its role within the broader health reform and health information technology agendas. The ANZ Telehealth Committee has developed a new national plan and has now been formally disbanded. In developing the National Telehealth Plan, the ANZ Telehealth Committee drew on the themes from the Think Tank. Key elements of the plan are:

- managing and planning telehealth services in Australia;
- communications, education, and training;
- evaluation, research and development;
- consumer and community participation;
- standards; and
- infrastructure issues.

In taking these matters forward the opportunity exists to draw on the expertise of clinicians and administrators over the past five years to reprioritise telehealth policy developments in line with consumer expectations.

PROPOSED ACTIONS

1. The draft telehealth plan will be finalised during 2001.
2. AHMAC will consider options for coordinating telehealth actions at a national level.

RESPONSIBILITY

NHIMAC, Commonwealth Department of Health and Aged Care, State and Territory health departments, AHMAC.

5.3 Increased use of online applications to support clinical practice

Significant opportunities to improve clinical health services and to reduce errors arise from the implementation of new information management, communications and electronic commerce systems for use by clinicians at the 'point of care'. The early implementation of these systems is important because they can deliver direct benefits as well as the indirect benefits of increasing clinicians' use and acceptance of the new technologies.

While there are numerous unrelated pilot projects demonstrating the advantages of such systems throughout the Australian health system, these are isolated initiatives and often 'islands of technology' that do not connect easily to wider communication and electronic commerce systems. The following section describes the first stage of action to realise these benefits on a national basis.

5.3.1 Enabling electronic requests for diagnostic and treatment services

CONTEXT

The ability to electronically request and receive diagnostic testing and treatment services has the potential to create significant benefits for the health sector. These include:

- increased access to test results for practitioners, thus reducing delays in responding to abnormal results and hence improving quality of care for health consumers;
- accurate and timely communication and accounting for service requests and cancellations, from clinicians to service departments such as pathology laboratories and medical imaging;
- less time wasted and fewer errors resulting from difficulties in reading clinicians' handwritten requests and/or incomplete request data; and
- less duplication of tests requested, as the information system will alert the clinician to potential duplicate orders.

OBJECTIVES

1. Provide faster access to diagnostic and treatment services for both practitioners and consumers.
2. Achieve greater efficiencies by enabling diagnostic and treatment services, claimable under Medicare, to be requested electronically.
3. Understand the benefits to the health sector and patient care of electronic ordering.
4. Understand and address the business, technical, privacy, legal and clinical risks associated with the introduction of the electronic communications (requests).
5. Achieve compatibility and avoid duplication with other similar systems, for example, electronic requests for pharmaceuticals (e-script).

PROGRESS TO DATE

In 2000, the Westmead New Children's Hospital trial commenced to help identify the risks and clarify the way forward for implementing computerised information systems that support online requests by clinicians and reporting of results of diagnostic and treatment services. A review of the first six months of the trial was conducted in November 2000 and showed no net increase in requesting patterns. A follow-up review is scheduled for July 2001. However, with the introduction of the *Electronic Transactions Act 1999*, the legislative environment

in which the HIC operates has changed significantly since the introduction of the Westmead trial.

PROPOSED ACTIONS

The HIC is finalising information technology requirements, such as the use of digital signatures, for use in future electronic transmissions and data storage. The trial at Westmead has assisted in developing awareness of what is possible within the electronic environment. However, the implementation method is not likely to be repeated after July 2001. Instead, a new set of protocols is being established whereby requesting practitioners use digital signatures and secure transmissions between requesting and receiving medical practitioners.

TIMETABLE

Following the review in July 2001, a decision will be made about ongoing approval for the electronic requesting as used in the Westmead trial.

RESPONSIBILITY

HIC, Westmead New Children's Hospital, Commonwealth Department of Health and Aged Care, and NSW Health.

PART SIX — USING INFORMATION TO BUILD A MORE EFFICIENT AND EFFECTIVE HEALTH CARE SYSTEM

Through the explosion of the Internet, e-commerce technologies and models are having a revolutionary impact on all industries involved in business-to-business relationships. There have been several studies undertaken overseas and within Australia which all conclude that there are significant opportunities for the health industry to capture benefits from information exchange and trading in an e-procurement environment.

Ms Susan Medlin, Manager, Business Support and Development Group,
Acute Health, Victorian Department of Human Services³³

The Health Insurance Commission is working towards providing its health information as a resource for the health sector to use in planning and research ... Generating the necessary trust between organisations requires a procedure that allows each data custodian to retain adequate control over their own records while still providing planners and researchers with the appropriate combined data sets.

Dr John Bass³⁴

This section of *Health Online* is about how better information management through the use of information and communications technologies can lead to more effective and efficient delivery of health care in Australia.

Two key objectives are discussed:

- facilitating the greater adoption of electronic commerce to produce a more efficient health system; and

³³ Proceedings from the National *Health Online* Summit

³⁴ op. cit.

- further developing information management practices to improve the availability of aggregate health data for research, policy and planning purposes aimed at providing a more efficient and effective health system.

6.1 Facilitate the greater adoption of electronic commerce to produce a more efficient health system

Greater uptake of electronic commerce within the health care sector offers opportunities to reduce costs across both supply and distribution chains and to provide improved client services through faster turnarounds. It can substantially reduce costs associated with inventories, procurement and distribution of products. However, while the health care industry is a multi-billion dollar industry, it is still relatively underdeveloped in the use of e-commerce. This can be attributed to several factors, including the prevailing culture of 'being there for the patient and not as a business' and the complex organisational structures within hospitals. For example, the hospital supply chain is quite complex — large teaching hospitals may have several thousand suppliers.

The real power of information and communications technologies is not in making existing processes work better, but in providing the opportunities for organisations to break old rules and create new ways in which to go about their business — that is, business re-engineering.³⁵ In essence, this involves identifying the need to change, then setting about achieving and sustaining performance improvement within a context of cultural and behavioural change.

The impact of such technologies in re-engineering health business processes will be to make supply, distribution and customer services more productive and effective. Not only does e-commerce offer an opportunity to fundamentally change the way in which 'health business' is conducted; it also provides an important means of facilitating the uptake and expansion of computerisation in the many areas of health service provision that are still predominantly paper-based.

6.1.1 Advancing the use of electronic supply chains in hospitals

CONTEXT

An effective hospital supply chain ensures that the right product is available at the right place and time, and gives the best value for money, to efficiently

³⁵ Hammer M and Champney J 1994, *Reengineering the corporation: a manifesto for business revolution*, Nicholas Brearley Publishing, London.

support the health care service and clinical needs of the end-consumer — the patient. Re-engineering hospital care supply chains through the better use of technology creates opportunities to improve Australia's health care system by using resources more efficiently and effectively.

Supply chain reform is likely to achieve significant cost and resource efficiencies, particularly in the acute care sector. Ideally, any gains should be returned to the delivery of clinical care. Associated improvements in managing and costing episodes of care will also contribute to better planning and resource allocation. Similarly, efforts to enhance the quality of patient safety and care will also be supported by linkages to clinical initiatives such as electronic prescribing and therapeutic device tracking and monitoring. An example is the work of the Medicines Coding Council of Australia in developing a medicines product code datalist to enable users to apply the common product codes for supply, clinical reference and financial services in the health care system.

A national coordinated and strategic approach to supply chain reform that fosters common standards and interoperability is critical both to realising the potential benefits and to minimising the associated costs and timeframes of reform.

OBJECTIVE

Facilitate hospital supply chain reform through the implementation of an agreed action plan that covers:

- matching procurement decision-making and processes to clinical need;
- accurate and efficient information sharing along the supply chain; and
- efficient product movement and use of resources.

PROGRESS TO DATE

The National Health Supply Chain Reform Taskforce was established by the National Health Information Management Advisory Council (NHIMAC) in July 2000 to develop a three-year National Action Plan for supply chain reform. The Taskforce, which included hospital, industry and government representatives, sought to build on a range of earlier efforts including the following.

- PeCC (Project Electronic Commerce and Communication), whose goals have included rationalising clinical supply chains through implementation of electronic commerce on the supply side, using Internet-based technologies and open systems in a framework of internationally accepted standards. PeCC continues to support the advancement of electronic supply chains in hospitals. This support includes chairing Standards Australia sub-

committees, secretariat support to the Medicines Coding Council of Australia, and working with industry and government to facilitate the increased uptake of e-commerce across the health supply chain.

- *Health & Industry Collaboration — the PeCC Story*, an evaluation of collaborative approaches and strategic industry alliances in the e-commerce environment using PeCC as a case study. It was written by Professor E Moor and Dr M McGrath of Macquarie University and funded by an Australian Research Collaborative Grant with IBM as an industry collaborative partner (final report: May 2000).³⁶
- [E@sia](#) Project, the KPMG Consulting Report to the Commonwealth Department of Health and Aged Care for the *Health Online* agenda, which aimed to identify the actions needed to advance the development of supply chain reform in the acute health sector and who should take the actions (final report: June 2000).³⁷
- *DASH Project — Diagnostic of the Supply Chain in Hospitals*, a PriceWaterhouseCoopers report for the Medical Industry Association of Australia that explores the technical and business process changes necessary to support e-commerce for the medical–surgical industry sector (final report: May 2000).³⁸
- A variety of State and Territory, private sector and industry supply chain reform efforts/projects.
- Learning from international experience.

The Taskforce has produced a report called *National Action Plan to Implement E-Commerce in Supply Chains in Hospitals*. The report is to be referred to the Australian Health Ministers' Advisory Council (AHMAC) and then to Health Ministers.

PROPOSED ACTIONS

As indicated above, the Taskforce report is yet to be finalised. The key actions recommended in the draft Taskforce report include:

1. Providing a governance model that will accelerate the adoption of e-commerce and ensure the sustainability of reform.

³⁶ More E and McGrath M 2000, *Health & Industry Collaboration: the PeCC story*, Commonwealth of Australia, Canberra.

³⁷ KPMG Consulting 2000 [E@sia](#) Project, final report: A KPMG Consulting report to the Commonwealth Department of Health and Aged Care, Commonwealth of Australia, Canberra.

³⁸ PriceWaterhouseCoopers 2000, *DASH PROJECT: Diagnostic of the Australian Supply Chain to Hospitals, Final Report*.

2. Undertaking business case development, including identification of the distribution of supply chain reform costs and benefits, and the marginal benefits of a national approach.
3. Exploring and establishing supportive funding and financial mechanisms for the uptake of e-commerce.
4. Identifying barriers and facilitating structural, organisational and process reforms within hospitals and supplier organisations to support electronic supply chains including, amongst others, the development of electronic catalogues, demand forecasting and strategic procurement strategies.
5. Establishing robust open standards to support the formal collection, storage and transmission of data within electronic supply chains, for example, messaging, product identification and central storage of static product data.
6. Supporting efforts to ensure availability and access to requisite telecommunications infrastructure and information technology.
7. Establishing open environments for electronic trading that connect networks of buyers and suppliers.
8. Establishing a contractual framework for public hospitals that standardises core conditions yet allows sufficient flexibility in schedules to address local needs and conditions.
9. Developing and delivering a communication strategy that covers the national aims and benefits of reform and e-commerce management.
10. Establishing a coherent evaluation strategy that monitors the qualitative and quantitative impact of reforms.

TIMETABLE

1. The national action plan to implement e-commerce in supply chains in hospitals has been developed with a 2001–2004 timeframe in mind. Supply chain reform will be an iterative process with earlier achievements, such as business case development, expected to provide the foundations for ongoing work, such as communication and evaluation strategies.
2. Governance arrangements at the national and State and Territory level — to be operational by the end of 2001.
3. Standards for messaging, product identification and nomenclature and centrally storing static product data — expected to be agreed by the end of 2001.
4. Develop a security framework for electronic procurement in health — by the end of 2001.

RESPONSIBILITY

National Health Supply Chain Reform Taskforce, Commonwealth Department of Health and Aged Care, States and Territories, Health Insurance Commission (HIC), National Office for the Information Economy, the private health sector, suppliers, hospital executives and supply managers, and Standards Australia.

6.1.2 Increase the level of electronic claiming for Medicare and the Pharmaceutical Benefits Scheme

CONTEXT

The HIC is seeking to provide members of the public and health care providers with convenient and easy-to-use facilities to communicate electronically with the HIC. The intent is to expand the coverage of electronic services to rural and remote users and to progressively upgrade the sophistication of Medicare and Pharmaceutical Benefits Scheme (PBS) services in line with the health sector's ability to support such services.

The HIC is committed to the use of international and national standards to facilitate networking in the health sector. The Medclaims service currently uses the X.400 standard and a number of approved Medclaims network providers to connect health care providers to the HIC. Through the Internet, the opportunity exists to expand take up of Medclaims, to expand electronic claiming to the PBS and to lower networking costs.

OBJECTIVES

1. Increase avenues for electronic submission of claims.
2. Develop the HIC's electronic infrastructure to support expansion of electronic transactions.

PROGRESS TO DATE

The HIC has a range of initiatives in progress to improve access to Medicare and PBS. Under the banner of *easyclaim* (see also section 6.1.4), the HIC introduced a variety of products to encourage the submission of claims information electronically and complement its Medclaims service.

Telephone claiming

Since the trial of Medicare *teleclaims* in 1995, access to telephone claiming has been expanded to cover an increasing number of rural and remote communities.

Kiosk claiming

Trials commenced in October 1997 to test a Medicare electronic kiosk where customers insert their Medicare card and enter their claim details using a touch screen. This information was then transmitted overnight to the HIC. As a result of Telstra's change of strategic direction and the withdrawal of support of this technology, only minimal evaluation was undertaken of the Medicare Electronic Kiosk. Therefore exploration of this type of technology is now on hold.

Fax claiming

Medicare fax devices enable residents in rural and remote areas to send their Medicare claims and medical accounts direct from their local pharmacy to the HIC and receive prompt payment. In the light of the Commonwealth Government's commitment to equity of access for the lodgement of Medicare claims, the product has also been made available in some metropolitan areas and where Medicare offices were closed. The HIC has installed almost 600 Medicare fax devices in selected pharmacies, targeting population centres that do not have ready access to Medicare offices.

Direct bill claiming

Medclaims uses electronic data interchange technology to support direct bill claims for Medicare services. The HIC will continue to encourage health care providers to adopt Medclaims. A plan is being developed to transfer the Medclaims service from its X.400 network base to allow claims to be transmitted across the Internet. The HIC is to continue to consult key stakeholders in the health sector about this issue. To date, no timeframes have been determined.

Patient claiming from doctor's surgeries

Medicare *connect* is a product that allows people to have their Medicare claims sent overnight electronically direct from their doctor's surgery to the HIC. A trial of this service was conducted in the ACT and Northern Territory. As a result of the change in HIC's strategic direction, evaluation of the Medicare *connect* trial was kept to a minimum and energy put into proof-of-concept real-time assessment that was the subject of market research with software developers, doctors and practice managers.

Two-way claiming

The HIC has worked with private health funds to implement electronic transmission of *in-hospital* (gap) claims from the HIC to funds that participate in the Medicare *two-way* arrangements. Medicare *two-way* claiming arrangements provide improved lodgement facilities for Medicare and private health insurance fund claims. These allow members of funds participating in the two-way arrangements to lodge their fund and/or Medicare claims at either their fund's

offices or any Medicare office, thus facilitating faster payment of gap claims. Electronic transmission of *in-hospital* 'gap' claims is in place for MBF, Medibank Private and the Australian Health Management Group health funds.

PROPOSED ACTIONS

1. Continued consultation with key stakeholders in the health sector about use of appropriate technologies for electronic claiming.
2. The HIC to continue to facilitate the move to the Internet as the preferred channel for electronic claiming activity.

TIMETABLE

Ongoing.

RESPONSIBILITY

The HIC will coordinate these initiatives in partnership with clinicians, pharmacists, and the suppliers of practice management and pharmacy software.

6.1.3 Simplified billing

CONTEXT

The Commonwealth Government is committed to increasing the viability of private health insurance for consumers. An Industry Commission Report in 1997 identified (in part) the following issues with traditional billing arrangements:

- patients are not sure about the total cost and their component of that cost before their admission to a hospital;
- patients may receive medical bills over an extended period following conclusion of a hospital episode; and
- patients may not be sure whether they have received the final bill.

A taskforce convened to consider the status of private health insurance in 1997 agreed to support trials of simplified billing. Seven sites undertook the original trials. Factors found to be limiting the speed of the roll out and uptake of simplified billing include:

- cost (particularly in the largely manual systems that are currently in use);
- widespread medical acceptance of the new arrangements;
- mixed response from health funds;

- limited community awareness of simplified billing;
- lack of electronic data interchange and electronic file transfer payment systems throughout the health industry; and
- the lack of widely available integrated hospital and medical billing systems.

Simplified billing has now been implemented throughout Australia and efforts are being made to address these factors.

OBJECTIVES

1. To increase the uptake of simplified billing by facilitating the electronic connection of billing agents, health funds, the HIC, hospitals and providers.
2. To increase the uptake of simplified billing for private patients in-hospital services.

PROGRESS TO DATE

The HIC, through consultation with the Department of Health and Aged Care and other stakeholders, has developed a panel of approved software for use by billing agents and health funds. This software is posted on the HIC's simplified billing web site and is available for use by any interested parties. Some health funds and billing agents have also developed appropriate software to enable electronic lodgement of simplified billing claims. Twenty per cent of all in-hospital claims are now lodged via simplified billing, with approximately 80 per cent of these claims being lodged electronically. All major health funds lodge simplified billing claims electronically. Gap cover legislation (enabling legislation) has also been introduced to provide additional support for existing simplified billing legislation to increase the adoption of electronic claiming.

PROPOSED ACTIONS

1. Due to the success of the first phase of simplified billing and the broader consultation with providers, health funds and billing agents, this initiative will continue and be regularly monitored.
2. The Department of Health and Aged Care is reviewing the future directions for simplified billing and the result is due later this year.

TIMETABLE

1. Ongoing.
2. End 2001.

RESPONSIBILITY

The HIC will undertake and support development and implementation of processing systems for simplified billing and at the appropriate time will undertake promotional activities in conjunction with the Department of Health and Aged Care.

6.1.4 Future work

HIC BUSINESS IMPROVEMENT

The Business Improvement Program evolved from the HIC's strategic planning processes. The intention of the program is to re-engineer HIC systems to ensure reliable, speedy and secure transmissions utilising the web channel. Government on-line and *Health Online* have been key drivers requiring HIC service delivery mechanisms to be re-engineered.

The Business Improvement Program will deliver the intended outcomes through a number of major projects:

- PBS on-line claims — pharmacies will be able to submit their claims electronically to the HIC via a new business-to-business (B2B) channel. This project will also deliver an on-line reconciliation payment statement to the pharmacist's desktop. In addition, it will allow pharmacists to validate customer entitlement and other claim edits on-line. The HIC will provide a reply back to the pharmacist online and in almost real time.
- Directories — this project will deliver core infrastructure to the HIC. The system will institute a consumer and provider directory for use by all HIC systems and information products, enabling new products and services to be developed more quickly, as well as easy access to information on entitlement.
- Easyclaim — this project includes initiatives to complement the Medicare office network and enhance access to Medicare claiming. The initiatives are:
 - Medicare Easyclaim phone booths,
 - Medicare Easyclaim patient claiming from doctors' surgeries, and
 - Medicare Easyclaim support for migration from X.400 transmission protocol to Internet claiming.
- Better Medication Management Scheme (BMMS) — this project will develop and deploy a system that provides improved medication history information for health sector professionals and consumers to assist in clinical decision

making, improve health outcomes, and meet consumer needs for privacy and accessible information.

The business improvement project will provide an integrated approach to operating the HIC corporate web channel by coordinating, maintaining, improving and delivering Internet and Intranet web-based products and services. The first products will be released in November 2001, with further releases in March and June 2002.

Within the HIC, the Business Improvement Board is the highest-level formal committee that will manage the progress and deliverables of all projects in the program. The Board will approve and prioritise projects and deal with high-level issues affecting the successful completion of projects.

USING IT TO IMPROVE THE PRESCRIBING AND MEDICATION MANAGEMENT SYSTEM

The Third Community Pharmacy Agreement, effective from 1 July 2000 to 30 June 2001, sets out the remuneration arrangements for community pharmacies dispensing benefits under the Pharmaceutical Benefits Scheme. The Agreement also involves a range of new initiatives that will bring substantial benefits to the community as well as improved financial arrangements between pharmacists and the Government.

In an initiative under the Agreement, the Commonwealth and the Pharmacy Guild of Australia have recognised the enormous potential for using information technology to maximise the effectiveness of the prescribing and medication management system.

The parties acknowledge that the scope now exists for consumers, medical practitioners, approved pharmacists and governments to work together to build processes and systems that will combine and share relevant patient data (with patient consent and appropriate privacy and confidentiality controls) and to use these systems to improve the quality and safety of prescribing, dispensing and medication management.

Funding has been provided under the Agreement for the Guild to undertake the development of planning, training and change management initiatives in the information technology area.

The Department of Health and Aged Care and the Pharmacy Guild are currently negotiating about the activity to be undertaken.

USING E-COMMERCE BETWEEN FUNDERS AND PROVIDERS

A future area of work will be to examine the possibilities for expanding e-commerce for online transactions between key funders and providers in both the health and community sectors.

6.2 Further develop information management practices to improve the availability of confidentialised health data for research, policy and planning purposes to provide a more efficient and effective health system

Reliable and timely information on how the sector is performing for individual Australians is a cornerstone of a better health care system. At every level of the system, consumers, practitioners, managers, policy makers and the general public are seeking more information about health and health services for better decision making and, increasingly, for greater accountability.

To develop a better understanding of the interaction between health care delivery and the health of the population, and a more strategic approach to health care delivery, public health information (such as births, deaths and cancer registry data) needs to be brought together with information gathered from individual health encounters such as hospital morbidity and Medicare data. Bringing together data from disparate sources provides a more complete picture of health care and can help to identify where more resources should be targeted for the greatest gains.

The following section discusses how information technology can be used to link data currently collected under different programs, and how in future, electronic health records can provide an even greater opportunity to collect data across the care continuum.

6.2.1 Establish the framework for the use and management of national clinical/administrative data

CONTEXT

In the health sector, as in government more generally, there is a growing demand to systematically assess the quality, safety and outcomes of programs. There is also a greater emphasis on evidence-based health care. These pressures result in significant demands to collect, collate and analyse vast quantities of health data.

Governments and service providers require quality data to assist them in balancing increasing demands for health services and products within constrained budgets, to assess the impact of programs and interventions, and to support planning for health services. Australia's ageing population and the increasing availability of new services and products driven by research and technology are all adding substantially to the need for policy makers and planners to be able to:

- forecast trends with greater accuracy;
- determine the cost-effectiveness of various treatments and interventions proposed for the same conditions;
- determine the contribution that health care makes to the health status of the population;
- evaluate where the most value for the dollar lies amid the endless possibilities for spending money on health care;
- assess the evidence base for new and existing interventions;
- monitor and evaluate quality of care and health outcomes;
- identify best practice;
- detect adverse events; and
- identify where quality improvement is most needed and monitor improvements over time.

There is a growing commitment at all levels of the health care system to achieve more client-centred care via better coordination and continuity of care across services, settings and providers. However, the current separation and fragmentation of care across these various 'boundaries' poses a major barrier to achieving this and is also reflected in the separation of data.

Despite myriad data collections (mainly designed for administrative purposes), there is still relatively little readily available information about how well the Australian health care system actually delivers care, or the extent to which it actually improves health outcomes.

Important gains can be made by linking existing datasets. However, in the longer term, a national system of electronically stored health records, appropriately constructed, would permit administrative, planning and research information to be gathered in much better ways to aid research and planning purposes.

This does not, of course, imply that a large, centralised database is required. On the contrary, it is likely to be operating in an environment comprising a number

of datasets, each designed for specific purposes. This represents a distributed data environment but, with appropriate planning, the expectation is that it would be possible to draw aggregate data together for particular research, policy and planning purposes. This data would be aggregated in such a way that it remains confidential and cannot be linked to the individuals it represents.

GUIDING PRINCIPLES

The difficulties encountered to date in building up a set of national performance indicators for the Australian health system show that establishing and maintaining systems to collect, analyse and report such information imposes considerable burdens on providers and organisations, particularly in terms of time and financial costs.

To ensure data quality, it must serve the interests of those who have to collect it. It is imperative, therefore, that information for policy and management purposes is collected as a by-product of operational systems.

The overall objective, then, is to use data that will be collected routinely within clinical and administrative information systems as part of providing patient care — it is not about collecting whole new sets of data and thereby imposing additional and unnecessary burdens upon health care professionals. It is also important that any data collected can be fed back to those who have provided it, that is, providers, their professional organisations, and consumers.

While there is therefore a strong argument for better data for research, policy and planning purposes, significant issues about protecting data need to be understood and addressed to the satisfaction of those involved in providing it. Australian health consumers need to be assured that their personal health information is protected by strong data protection arrangements. Privacy and data security protection measures need to be addressed in the design stages of information-gathering systems. Increasingly, sophisticated mechanisms, such as the use of ‘pseudo-identifiers’ that can allow data about an individual to be linked to other data about the same individual, but still protect the identity of the individual, may well prove useful as an additional level of surety.

Any information management initiatives using new or emerging technologies will need to take into account the substantial amount of work the National Health Information Management Group (NHIMG) has already done in developing data standards and definitions.

Apart from specific research projects, most of the data for policy and planning purposes would only be required in a de-identified form, much the same way that unit-record Census data are made available to researchers and planners.

OBJECTIVES

1. Enhance connections between existing datasets.
2. Establish a framework for national clinical/administrative datasets (in a distributed data environment).

PROGRESS TO DATE

The Commonwealth, States and Territories, various institutes such as the Australian Institute of Health and Welfare (AIHW), and many academic organisations are already undertaking projects that involve linking data from the limited, mainly administrative, data already available or by utilising data that has been specifically assembled — such as data drawn from cancer registers. For the most part, the linked data are limited to operational and acute care data.

Two current projects involve collaboration between the Commonwealth Department of Health and Aged Care and the health departments of Western Australia and Queensland. These projects are to link the Medicare Benefits Schedule (MBS), the Pharmaceutical Benefits Scheme (PBS) and hospital morbidity data under strong privacy protocols, using de-identified records.³⁹

The States and Territories have not had routine access to MBS and PBS data. However, under the latest Australian Health Care Agreements, they will be able to access de-identified unit record data on the use of the MBS and PBS and on costs for medical and pharmaceutical services provided within their own jurisdiction.

PROPOSED ACTIONS

There is a growing proliferation of different types of data collections, such as the establishment of specific disease registers, which provide a useful but fragmented picture of Australians' health. If the proposed national network of health information (*HealthConnect* — described in section 5.1.1) were to progress to a national roll out, there would be a much improved capacity to collect clinical data and to collate it more cohesively under a national framework.

While *HealthConnect* could provide a unifying framework, it is important to understand that the health information network would not form one large, central database. Rather, it would operate in a distributed environment, with sub-sets of data being available for particular purposes from individual electronic records held throughout the health sector. The framework would also need to address

³⁹ De-identified data refers to data for which the risk of identification of a particular individual is very low.

national information needs that have already been identified by NHIMG, and build on the National Health Data Dictionary.

There would also need to be agreement about privacy/data protection issues in the design of any national collection of clinical data. These issues are being progressed by the Commonwealth, States and Territories (see section 3.1.1). In this context, data protection issues for the health sector will specifically address the proposal for enhanced data linkages (existing datasets) and the creation of a new national data collection of clinical information.

Also, the use of data collected under *HealthConnect* for research, policy and planning purposes would be subject to individual consumer consent. To address understandable consumer and provider concerns about privacy and confidentiality, access to information derived from *HealthConnect* may need to be controlled by a separate body that would set the rules about access, how consent would operate and how users could be authorised to access nominated information.

Notwithstanding this development, it is important to review current data holdings and develop a coherent proposal for a future integrated research/data framework.

TIMETABLE

Report on the nature of the framework required for a new national clinical dataset and options for its planning and development to be provided to Australian Health Ministers — by mid-2002.

RESPONSIBILITY

Commonwealth Department of Health and Aged Care to initiate. NHIMG to be involved. Report to be prepared for the *HealthConnect* Interim Board and referred to Australian Health Ministers through AHMAC.

PART SEVEN — EXPORT OF AUSTRALIAN ONLINE HEALTH SERVICES

Due to the small domestic market, Australian companies must pursue the worldwide health information technology market. Australia has the potential and capacity to do so.

Ms Yvonne Packbier⁴⁰
Collaborative Health Informatics Centre

7.1 Expand markets for Australian online health services

7.1.1 Market development for online health services

CONTEXT

Internationally, market opportunities in health information and communications technologies are opening up with the increasing recognition by governments that health information technology is now a fundamental part of health system infrastructure. While Australia is a relatively small country, its health care sector is in a strong position to participate in overseas markets. Australia is recognised internationally for exacting standards of medical training and a high level of medical expertise. The high regard overseas for the quality of Australia's health system is exemplified by requests from regional governments for help in developing their own health systems.

Australia is also a world leader in both the introduction and uptake of health care information technology in certain areas, including telehealth, electronic data exchange and hospital departmental systems. The greatest growth opportunity for Australian health information technology companies is in the Asia Pacific

⁴⁰ Proceedings from the National *Health Online* Summit

region. The total Asia Pacific health information technology market (excluding Japan) is forecast to grow at a compound annual growth rate of 17 per cent.⁴¹

Consumer health information has also been identified in the health industry as a potentially large market for development. The Victorian Department of Human Services has developed the *Better Health Channel*, an Internet-based entry point for both consumers and providers. The Commonwealth Department of Health and Aged Care has also developed *HealthInsite* (see section 4.1.1). Clinical protocols may offer another major market development opportunity. However, issues such as intellectual property in relation to marketing online services have not yet been well explored in the health sector. Clear models for product development, intellectual property, royalty and revenue management will need to be developed before online services can become market developed.

Export opportunities are important not only in terms of balance of payments and employment opportunities for Australia; they are also a way of recouping the substantial investment in developing the knowledge, skills and infrastructure of the health sector.

Currently, the overall approach of the Australian health care sector to developing opportunities is fragmented and uncoordinated. To progress Australia's export of health information and communication technology goods and services, a concerted, national approach is required, thereby reducing the significant amount of duplicated time and resources required to seek out overseas markets.

OBJECTIVE

Develop a coordinated national approach to identifying and developing potential export markets for Australian telehealth and health informatics services.

PROGRESS TO DATE

In its role as the national health agency, the Commonwealth Department of Health and Aged Care has forged links with other governments, international agencies and multilateral donors (eg the World Bank and the Asian Development Bank), and used its participation in regional and international forums to promote the Australian health sector. At a national level, Commonwealth agencies have worked to support the export of health industry products and services (including the export of health information technology and telecommunication services).

⁴¹ Collaborative Health Informatics Centre (CHIC) Ltd. 2001, *Australian E-Health Market 2001–2004*.

The Health Insurance Commission (HIC) has been undertaking international consultancy projects for a number of years and plays an important role in identifying and developing potential export markets to promote HIC products and services overseas. During the past two years, HIC has implemented and assisted in developing a wide range of health information projects for various countries, including Bulgaria, China and the Philippines.

- *Bulgaria* — the HIC has been involved in developing projects throughout Bulgaria, including the Health Reform Project (1999), Health Insurance Operations Project (2000) and most recently, the General Practice Training Project (2001). Through these initiatives the HIC has developed strategic information technology plans, finance models and comprehensive training courses.
- *China* — the HIC has provided technical assistance to China in the area of health insurance reform. HIC's assistance is part of a general social security reform project led by the Commonwealth Department of Family and Community Services. HIC's role within this project was to provide policy advice and develop an economic model to forecast health insurance revenue and expenditure.
- *Philippines* — in 2001, the HIC assisted the Philippines with its Benefits Package and Quality Assurance Project by formulating an information plan to monitor quality performance standards of health sector providers.

The Collaborative Health Informatics Centre (CHIC) was established in 1998 with seed funding from the Commonwealth Department of Industry, Science and Resources, the Queensland Government, and the information technology industry. Its purpose is to facilitate the relationship between health care organisations and the information technology industry and to grow a robust Australian health information technology industry. In the past three years CHIC, in conjunction with Austrade and other government agencies, has worked towards a unified and coordinated approach to export market development in the health information technology sector. Activities include:

- Publication of a series of international health information technology market reports to provide Australian companies with complete, current and accurate information on which to base their exporting activities.
- Development of extensive networks in Europe, Asia and North America. This includes the European Union Telehealth Group, European Health Telematics Association, Healthcare Information Management and Systems Society, and various Asian, North American and European Ministries of Health and industry organisations focused on information technology development in health care.

- Undertaking more than 10 international missions including major delegations to the world's largest health information technology conference — the annual Healthcare Information Management and Systems Society conference in the United States — various targeted European delegations, and annual trade missions to Asia.
- One-on-one export assistance through Austrade's Export Access program to small and medium-sized Australian health information technology companies. This program provides companies with advice and market research on their first or new overseas market.

To enhance awareness of the capabilities of the Australian health industry, Austrade has arranged participation in major international trade promotions in which various health information technology companies have been represented. Suppliers of health industry software are also listed on Austrade Online. 'Australia on Display', a searchable database of Australian companies, products and services targeted at overseas buyers, is accessible at <http://www.austrade.gov.au/aod/>.

PROPOSED ACTIONS

1. Develop a National Health Website that is intended to provide a comprehensive overview of the Australian health system and promote Australia's capabilities and expertise. The web site will offer a single entry point to other government agencies and levels of government, enabling industry to identify contacts and potential commercial opportunities.
2. Develop a project proposal to review the current and future market potential for online health goods and services and refer it to the National Health Information Management Advisory Council for consideration. This could involve a proposal for engaging an appropriately skilled 'ambassador' to network internationally, with funding shared by government and the private sector.

TIMETABLE

1. Establish the National Health Website — by end 2001.
2. Refer a project proposal on the market potential of online health services to NHIMAC — by 2002.

RESPONSIBILITY

Commonwealth Department of Health and Aged Care.